THE SIGHT-SAVING REVIEW

December, 1931

"Let There Be Sight"

Volume I
Number 4

PUBLISHED QUARTERLY BY
THE NATIONAL SOCIETY FOR THE
PREVENTION OF BLINDNESS, INC.

Price $3.00 a year; single copies 75 cents

Published quarterly by the National Society for the Prevention of Blindness, Inc., Office of Publication, 1315 Cherry Street, Philadelphia, Penna.; Editorial Office, 450 Seventh Avenue, New York, N. Y.

Application pending entry as second-class matter at Philadelphia, Pa., Postoffice.

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The Social Aspect of the Movement for the Prevention of Blindness: A History*

Edward M. Van Cleve

THE organized effort to conserve vision has attracted not only physicians and social workers, but teachers, editors, business men, labor leaders, engineers, and people in virtually every other walk of life

ON THE six occasions of the bestowal of the Leslie Dana Medal, it has been awarded heretofore in every case save one, to an eminent physician, and with acknowledged propriety. The subjects of the addresses made by these recipients have had a distinctly technical character, I doubt not. Therefore, it seemed best on this occasion to choose for our consideration a theme quite remote from the professional for the sake of variety on the one hand, and because of the incapacity of the speaker, on the other hand, to deal properly with technological aspects of our common interest. I call your attention then to the social aspect of the movement for the prevention of blindness.

And because the word "social" connotes people, this address will occupy itself with some personalities rather than with the progress of our movement in general. We have a phrase, social service, whose sense has acquired something of triteness through too frequent application, and for that reason I am somewhat loath to apply it to this work in which we are engaged. Yet in the best use of this lately invented term, the prevention of blindness ranks high as social service, for it is a Cause (written with a capital C) serving the people in a remarkably extended even if restricted sense. Every state in our Union has some vital connection with

*Address given upon award of the Leslie Dana Medal, presented at the Missouri School for the Blind, November 20, 1931, under the auspices of the St. Louis Society for the Blind and the Jacob Lampert Lecture Fund.

our National Society for the Prevention of Blindness, and more than 30 foreign countries as well. And the chief character in any historical review of the movement must always be recognized to be that long-time servitor of society, Louisa Lee Schuyler. Her social service began when as a young woman, emerging from her teens, she became a forerunner of the Red Cross through her active participation in the work of the United States Sanitary Commission near the close of the Civil War. Then came the founding of New York State Charities Aid Association and the establishment of the Bellevue Hospital School for Nurses. That she later became interested in preventing needless blindness was a stroke of fortune to us of which I shall speak later.

It is not my purpose to attempt at this time a detailed historical sketch of this movement; that indomitable and energetic collaborator of ours, Dr. Park Lewis, has urged me again and again to write the story of its beginnings and progress, since *quorum pars magna fui* (I think I may use such words in the same fashion as did Aeneas and with as little intentional egotism); I wish to speak of the people who had part in those beginnings, yet in dealing with these persons whom I shall delight to name and characterize in brief, I shall use that best method of knowing history—consideration of the men and women who have made the cause of prevention of blindness known and effective in these twenty-five years or so of its progress. Here I must be pardoned for some account of personal experiences quite unavoidable; so greatly has the movement developed from the time of those early efforts which are to be here recalled that one might be excused for indulging in reminiscences as of events long past; perhaps in another quarter century, as a really old man, I may tell the St. Louis workers in that day some stories of the times of their fathers, if the chance is given me.

All social developments have, I believe, begun in the concept and the devotion of some person. A single illustration will suffice: Adoniram Judson is preeminently typical of the 19th century exponent of missionary enterprise. Zeal for a cause, however, needed a sort of collateral to bolster its strength and to give it currency in the market. The story of his life shows how he obtained that needed social and political support. With Judson, as with many another, the missionary spirit must enlist co-operation of those not

initially interested, and many a wise missionary has developed statesmanship of a marked and lofty character. The ability to enlist able and powerful lieutenants in any cause is indispensable to its success. I am accustomed to think of Dr. Lucien Howe as a missionary in the field of medical enlightenment. In the '90's he secured legal enactments, first in New York State and then through arousing his fellow ophthalmologists, in other states, providing for the use of prophylaxis at the birth of babies. And these laws were mostly dead letters. When in 1908 I learned of the existence of such a law on the statute books of Ohio, put there in 1892 under the inspiration of the Howe Law of New York, I was told by certain ophthalmologists that it never had been taken seriously by the profession, that it was not meant to be enforced, that its purpose was merely educational. Being only a layman, an administrator, accustomed all my life first to obey the law and then to put some laws into effect, I was struck with the fact that this was something worse than futile, and a condition to be remedied. That was in Ohio and already in Massachusetts had begun that social service movement which was the forerunner of others, the establishment through the activities of a company of workers in the interests of the sightless of a State Commission for the Blind. Those Yankees had set themselves a four-limbed task, one of whose arms was prevention of blindness. Their cue was taken by the group of Ohioans who saw the chance to do service in such a field and who copied in large part the Massachusetts law, making prevention of blindness one of their chief aims. Thus the chairman of the Ohio Commission found himself face to face with that rather futile attitude of the medical profession toward the ophthalmia neonatorum law on the Ohio statute books, but empowered with his fellow commissioners to *secure* prevention of blindness.

Howe and his successors, notably Park Lewis, needed lay support. They secured it through the State Commissions, and of the New York Commission Dr. Lewis was a most active member. To the commanding influence of this statesman among physicians, this many-sided scholar in the school of humanity, this publicist of his profession, we owe the awakening of the interest of Louisa Lee Schuyler.

One day there came in the mail to Miss Schuyler's Madison

Avenue apartment a rather bulky piece of printed matter. It was the volume issued by the State of New York embodying the report of the Commission of 1906 to Investigate the Condition of the Blind in the State of New York. The compilation of this notable book was chiefly the work of the Commission's secretary, that well known laborer in the field of helpfulness to the blind, Olin H. Burritt, then superintendent of the state school at Batavia, the chairman and chief inspiration of the Commission being Dr. Lewis. Most people would put aside or wholly disregard such a report with its voluminous statistics, the usual long-winded remarks, its comments and recommendations; but not so this devoted public-spirited woman. She opened the volume and by chance saw first a picture of a group of blind children entitled, "Five Victims of Ophthalmia Neonatorum," and below the title she read: "Proper care at the proper time would have saved their sight." She says she was thunderstruck. She had never known anything much about the blind; with the fact that the calamity of blindness occurred to people, she was acquainted, of course, but that it might have been prevented in many cases, and was not, filled her soul with horror. Immediately she wrote to Dr. Lewis at Buffalo to ask him to call on her when he was next in New York City that she might consult with him concerning means to correct so unbelievable a situation. Dr. Lewis at once telegraphed that he would take the train and call upon Miss Schuyler the following day. The interview was held. The question put, "Is it true that children are going blind needlessly?" When the distinguished physician assured her that it was sadly enough true, there broke from her lips a vehement, "It MUST not be!" With characteristic energy Miss Schuyler proceeded to call together at luncheon a group of interested persons: Dr. Lewis, Miss Holt, Mr. John M. Glenn, Dr. J. Clifton Edgar, the noted gynecologist, and then and there was begun the drive against needless blindness. When she asked these advisers how much it would cost to get started and was told that $3,000 a year might be necessary, she exclaimed, "We shall have it—we shall have more; let us have $5,000."

The Russell Sage Foundation had begun its operations in 1907 and Miss Schuyler was one of its trustees. With the approval of

all the trustees and the director an appropriation of $5,000 a year was made to inaugurate a campaign to accomplish prevention of such blindness as might be prevented. That brilliant woman, notable opportunist in the best sense of the word, Miss Winifred Holt, seized the occasion to join forces with Miss Schuyler and use the lately established New York Association for the Blind's Committee on Prevention of Blindness to set the movement before her public. What a way she had, Miss Holt, to command attention and inspire assistance! How she turned the half-convinced women and men of wealth and influence, keenly desirous of doing good, into contributors to her cause and then into whole-hearted supporters! A real cause of justified pride she has esteemed it that the Committee of her Association on Prevention of Blindness has done so much for this movement. To carry on money was needed and Miss Schuyler was quite able to secure the appropriation of money she had promised and the warm support of her fellow trustees of the Russell Sage Foundation as well as the intelligent interest and wise guidance of the Foundation's director, John M. Glenn.

Those years from 1905 to 1910 were a time of awakening in our movement. Down in Kentucky a devoted woman whose interest in the mountaineers had called her into a peculiarly intimate relationship with doctors and teachers as she tried through her Mountain Fund to help these needy people, Miss Linda Neville, had established her own Kentucky Society for Preventing Blindness and had joined with her fellow townsman, Dr. J. A. Stucky, of Lexington in organizing, managing, conducting eye clinics up the creek valleys to the remote settlements and persuading those who must have hospital care to come to the Lexington Hospital for treatment. In every roster of workers for prevention of blindness the names of that great hearted physician and his undaunted coadjutor must stand high.

In Massachusetts Edward E. Allen, lifelong laborer in the field of service to the blind and Annette P. Rogers, cultured sightless woman, were members of the Commission for the Blind, the first publicly appointed group to begin this work; its chairman was a man who gave largely of his fine business ability to its affairs and was deeply concerned along with his fellow commissioners over the

cause of preventing blindness; James P. Munroe was the philanthropist and business man, the scholar and administrator, servant of his own state, in war-time and after a chief-of-bureau in the federal government, a wise friend of our cause.

Maryland had a society for prevention of blindness, chiefly the expression of Dr. Hiram Woods' desire to gain the support of the people of Baltimore in staying the ravages of infantile blindness. Dr. Woods, genial, happy-spirited, friendly, beloved! A distinguished ophthalmologist, a man of great influence.

I wish I had in hand the letter received back in 1909, written in Miss Schuyler's old-fashioned script, asking if the time were not ripe for a national conference and a possible organization of the forces. We in Ohio had groped our way toward a process of promulgating our gospel—the good news that blindness is not necessarily nor usually an act of God. We had called on others for advice and suggestion and the New York State Committee, whose executive, Miss Carolyn Conant Van Blarcom, brilliant, capable, resourceful, had with a basis of nursing knowledge undertaken the making of a layman's first-aid kit of information, was the chief source of supply and inspiration. My judgment, and that of others approached on the subject, was favorable to an assembly of interested workers. They came together—those named above and a considerable number more—with the Russell Sage Foundation Committee as convener. A *News Letter* was published shortly after by the Committee of the Foundation to which we all contributed a report of the work in our several communities. Then another conference was held, December 17, 1910, more largely attended, and out of it came the plan for a national society. Munroe, Woods and I were the committee to formulate a tentative scheme and after a brief delay for whipping an organization into shape, the American Association for the Conservation of Vision was established March 23, 1911, with a board of directors and a staff to begin work. This board numbered ten, including the three above named with Dr. Lewis president, with also an engineer, an expert in lighting and a labor leader. As a member of this board, too, Dr. Jacob A. Shawan, superintendent of the public schools of Columbus, Ohio, a nationally known educator, was chosen. Staunch, stalwart, great-souled friend of our cause—he was able to do for

it less than he proposed because of family and personal illness; but he should never be forgotten as one of the early props of a staggering structure. For the brilliant beginning of the American Association for the Conservation of Vision was soon seen to be fading as the mirage of promised financial support failed to become actual. But the spring of 1911 gave opportunity to make a great start in the field of publicity and the Association's staff prepared under high pressure an admirable contribution to a great meeting held in the Metropolitan Opera House in New York City. But the bills for this came to a treasurer who had no funds and there was a debt which hung over us for some time. One remembers the worries of those days and the gropings for a way out with some regret that we had so little prescience and perhaps too much willingness to nurse the counsels of hope. Some of the board of directors asked to withdraw but they would not do so without honorably proposing to liquidate the indebtedness. And it was done, the group of us pooling our obligations and sharing in the payment—Dr. Lewis, who insisted on taking two shares of the indebtedness, Dr. Shawan and I stayed on, the others retiring; we three hoped we could find money with which to re-engage a secretary and push on.

But why renew too particularly the agonies of these years of hope and disappointment? It was a struggle to get the infant through those beginnings. One incident of hopeful nature relieved a constant gloom. I wrote personal letters of appeal to friends, explaining the need of such a movement and the hopefulness of success of such an organization as ours. Only a few small checks came as a response at first; one day, Mrs. Ella St. Clair, a woman of means, herself a shut-in, good friend of years before in our Greenville, Ohio, home, sent in a check for $200 with the intimation that so long as I was actively engaged in the work she would make an annual contribution. Here was light in darkness! That money did something more than furnish and breed a little additional resource—it gave hope and encouragement to go on.

Another incident that belongs to this story of beginnings: Our triumvirate of never-say-dies assembled in Buffalo on occasion of a great educational meeting there and had the pleasure of meeting at luncheon, at his suggestion, Mr. Jerome D. Greene, executive director of the Rockefeller Foundation. It was a good luncheon, I

presume, set before us at Dr. Lewis's Club. I was too excited to know what I was eating. For, after we had concluded the gustatory part of our assembling, it was our privilege and purpose to set before this representative of generous contributing to worthy causes, Mr. Greene, our claim to recognition as a group of earnest workers in the field of public health, the field which the Rockefeller Foundation had chosen for its service. It was an enthusiastic and almost an agonized appeal that went into his ears. It turned out to be not unfruitful, though for some months it seemed otherwise.

It was good fortune that a young man of great force and character, Mr. Raynal C. Bolling, legal representative of the United States Steel Corporation and member of its Committee on Prevention of Injury by Accident, had been added to our board of directors. He saw the worth-whileness of such an organization as ours and he was able through his associations to make the cause appear a worthy one. In him Mr. Greene had confidence and both Mr. Bolling and Mr. Glenn of the Russell Sage Foundation had given the Association virility through their approval and their personal adherence. Imagine the joy which came with the announcement in May, 1914, that the Rockefeller Foundation had appropriated $25,000, distributed over five years, for the carrying on of this work! The gift was conditioned on a budget of $15,000 a year being provided. This was assured for the first year by the generous contribution of $5,000 by the Russell Sage Foundation additional to the $5,000 made for some years to the New York State Committee and to be continued to a merger of that Committee and the American Association for the Conservation of Vision.

So the National Committee for the Prevention of Blindness was born, that high sounding but less appealing "Conservation of Vision" title being dropped, and on January 1, 1915, began its career. I wish I were able to pay proper tribute to one of the chief sponsors of its beginning, John M. Glenn, faithfulest friend, wisest counsellor, unfailing optimist. Were it not for his persistence in hope and the encouragement of his manner and words the Society, now one of the most staunchly established and generously supported national organizations, would have been long delayed in its beginning and might, indeed, have failed of birth. And what a happiness to have known and associated with Major Raynal C.

Bolling, first great sacrifice of our aviation staff in the World War, man of character and high breeding, swift in decision, commanding in presence and in speech, a Chevalier de Bayard.

Elsewhere than in Massachusetts, pioneer of the movement, in Ohio, Kentucky, Maryland and New York, interest had sprung up spontaneously, or, perhaps, induced by reports of some of the activities above reviewed; this interest was especially notable in in St. Louis where in 1911 the work of the Missouri Association for the Blind, now the St. Louis Society for the Blind began. The genius and the personality of Miss Carol Bates, in her effective inauguration of this service to the blind, was recognized and is remembered not only here in St. Louis but as far away at least as New York. With the generous support of Col. Butler and the co-operation of others her work of social helpfulness bore fruit in various ways. Like other similar organizations the St. Louis Society chose to lend its aid to preventing blindness and that phase of its service continues as one of great importance. The first board of directors included some whom I came to know well, the Greens, Dr. John Jr., whose name mentioned in ophthalmological circles as friend to our cause always commanded a hearing for us, and S. M. Green, the representative in St. Louis known throughout the United States for every good thing that concerns the blind or cognate interests, Dr. Thomas J. Riley, who recently died in Brooklyn after an all-too-short life of brilliant service to humanity both here and in the metropolis, widely known and respected in his special field, Mr. James C. Jones, whose appreciated interest in matters concerning the sightless led us who were officially concerned to look his way when the American Foundation for the Blind was established with the hope that he might join its first official group, and with them besides Miss Bates, Mrs. Curtis, Mrs. Pelton, Miss Sloan, Dr. Lock and Mr. Knox. While this Society's aims were first to give employment to the blind and promote their social welfare a third aim of no less prominence was set forth —to prevent blindness. Into this work, with a heart of gold and a geniality that has made her beloved in all circles where she moved came Mrs. Anna F. Harris. The sixteen years she gave to this work made her not only a well known figure in this city but gave her a place of importance in national gatherings. And

I doubt not that the generous and intelligent service rendered by this St. Louis Society throughout the twenty years since 1911 continues with the approving support of Mr. Jones, now the honorary president, and with the direction of Mr. Johnston, the new active president, and his associates, Messrs. Carter, Dana, Lang, McBride, Barnes, Cummings, Hardesty and Green, and the management of Mrs. Lyle and her assistants. In this city, this Society under whose auspices we meet tonight, is a recognized power for good with its sevenfold program of usefulness.

In far away Utah and then in San Francisco a woman of generous impulses had similarly set up societies for promoting the cause of prevention of blindness and helping those who had become blind. This was Mrs. Andrew S. Rowan. She had married the man who carried the message to Garcia, young Lieutenant Rowan, and as an officer's wife she had gone to the Philippines and to Salt Lake City and then in his retirement to San Francisco. Here she and Col. Rowan now reside. Her enthusiasm drew to the cause adherence of society women and professional men and interest of great value was aroused in the cause of prevention.

And so, not only in the east, the center, the far west, in New Orleans, in Chicago, in the northwest, there were women and men who were stirred with that sense of a desire to help humanity out of which has grown this gre at cause of ours.

Let us now go back to that reference I made to the statement of some Ohio physicians concerning the Ophthalmia Neonatorum Law of 1892, to the effect that no hope of its enforcement was ever entertained. They may have felt their pessimism justified by experience of previous efforts in legislation for social betterment, yet it is a fine evidence of the hopefulness of the doctors who secured the enactment of the law when they offered it as an educational measure. To educate whom? one may ask. The rank and file of the medical profession, in fact. One day a group of eminent Ohio oculists met in my office by invitation and were requested to offer us suggestions as to how best we might promote the elimination of babies' sore eyes. An answer came swiftly and with some very strong expletives to the effect that we might begin with the medical schools. As, in the illustration used, Judson the missionary with all the will in the world and all the

backing of his own profession could not effect his great service without co-operative interest on the part of others indifferent or ignorant as to his main purpose, so these ophthalmologists needed some means other than any they had yet tried to secure the end they had in view, the reduction of infantile ophthalmia. One admires these physicians the better he knows them, earnestly striving to prevent at the very source the making of patients. What was suggested, that education begin with the medical schools, of course was out of the sphere of mere laymen, but it is interesting to relate that now, less than a quarter of a century later, the routine use of prophylaxis in hospitals is the rule whereas then it was, so we were told, the exception. What brought about the attention given in medical schools and everywhere may have been, as I think it was, the combined influence of these specialists and the laymen who had found it their task and their satisfaction to noise abroad the facts that should impress profession and public, too. It is interesting to recall how sometimes the propaganda bore evidence of success. One day in a plumbing salesroom in Columbus, Ohio, I was buying a valve attachment or something and ordered it sent to the School for the Blind. The salesman, learning that I was connected with blindness, said: "Say, did you ever hear about babies going blind because they didn't use drops when they were born? I saw an article in the paper about it, and, you bet, I made the doctor use 'em in *my* baby's eyes when he was born last week." The author of the newspaper publicity was pleased to note its effectiveness, though he refrained from announcing his responsibility for the article. But that the law itself was a dead letter and, indeed, incapable of enforcement remained the opinion of many, even as distinguished a partisan as Dr. Bruner of Cleveland. He told me that a certain legal adviser had assured him that the law had so many holes in it that it was not worth while to shoot any in. It remained for a certain Cleveland woman to prove the gentlemen incorrect in their judgment, for Marion Campbell, dogged and persevering, unwilling to leave any stone unturned in the effort to carry out her purpose of making it dangerous to neglect babies' eyes, brought case after case to trial with conviction of the careless attendant, under this very same law, intended only as educational and reputedly as full of holes as a Swiss cheese. To this devoted woman,

Miss Campbell, Ohio, New York, Illinois all owe a debt of respect and appreciation for faithful and effective service in prevention of blindness.

Perhaps it has been made clear in these remarks, partly historical and reminiscential, partly a portrayal of contributory personalities to the accomplishment of a set purpose—to make known the facts and stir the intent to overcome the needless waste of blindness that can be prevented—that this movement, at first essentially a medical men's movement, has become the more successful because into professionalism has been inducted the social element. A cause becomes a reform and grows to the status of a commonplace mode of living when the professional proponents are joined by those outside the immediate circle who give their interest and effort to promulgate the facts and thus gain the hearing and the acceptance of all intelligent people. In this process we see enlisted the interest of a great educator, a David Starr Jordan, who gave his adherence to this cause in its early stages; a noted public man, a William Howard Taft who gave his name as honorary president to the National Society; a successful business man, a Leslie Dana who conceives the cause sufficiently important to induce him to provide for the medal whose annual bestowal calls attention to the work done through certain public acclaim; an editor and publicist, a John H. Finley, of the New York *Times*, whose words spoken and written have accentuated the importance of the movement again and again; a distinguished and world famous minister, a Rabbi Stephen S. Wise, who can find no field of humanitarian effort more worthy of his sympathy; a lawyer and diplomat, a Joseph H. Choate, whose deep humanitarianism led him to make common cause with us. A catalogue of names of the good and great might be in this connection lengthened to tediousness. Suffice it to say that in every walk of life the men and women who have thought well of this cause are legion, the distinguished and the less widely known, and the great common people. It is when the sympathy and interest of society in general are aroused that a movement such as is ours may be said to have reached its apotheosis.

And it is in a spirit of true gratitude and satisfaction that the national prevention of blindness movement, now almost seventeen

years old as a going concern and nearly twenty-five years old as a joint physicians' and laymen's enterprise, has claimed the approval of many men distinguished in the profession of ophthalmology, such men as Drs. Glaser of San Francisco; Würdemann of Seattle; Luedde, the Post brothers and Howard of St. Louis (besides Dr. John Green already named); Bruns of New Orleans; Jackson of Denver; Wilder and Brown of Chicago; de Schweinitz, Holloway and Posey of Philadelphia; Blair of Pittsburgh; Gifford of Omaha; Stucky of Lexington; Wilmer of Baltimore; Derby of Boston; Bruner of Cleveland; and Alger, Berens, Cutler of New York;—to mention only a few and these all men whose affiliations with our enterprise came in the days of my managing directorship. Since my retirement from the chief responsibility, a host of others, particularly younger men, have given their countenance and active support to it. I believe I am justified in saying that the ophthalmological profession generally has endorsed the work of the National Society both individually and collectively.

Born in an effort to enforce the saving of babies from needless blindness, this movement has become broader in scope and more comprehensive in plan as the years have gone by. It is remarkable what sorts of people have become interested in its work and worth. An analysis of the list of 25,000 financial supporters of the National Society will show people in every walk of life giving this sort of allegiance to the cause. And it is because the social appeal of help to humanity is heard more distinctly and in more widely distributed regions that we dare hope it is to become a universally recognized cause.

Men of business, women of social prestige, professional leaders of human kind, engineers and manufacturers, teachers and preachers, writers and editors, artists and leaders of labor, presidents of colleges and universities and leaders in public life—presidents, senators, governors—in short, men and women of light and leading everywhere have made common cause with physicians and social workers in an ever increasing development of this movement which we here celebrate. Says the editor of a great metropolitan daily: "The survey of the various aspects of this modern 'holy war' should open the eyes of the many who can see, giving them a view of one of the most beneficial and nobly

humanitarian undertakings which have ever actuated a group of human beings."

To have had any part in such a meritorious service rightly warms the heart and stirs a pardonable pride. Let us as intelligent and generous members of human society give to such an undertaking always our best thought and our warmest support.

Vision Defects and Their Correction*

Willis S. Knighton, M. D.

THE nearsighted child must not be permitted to do close eye work. For those with progressive myopia, the simple out-of-door life is recommended; a general toning up of the whole system is the best insurance for the high myope

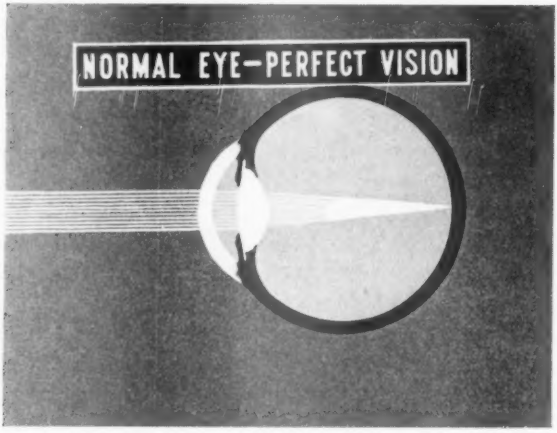
THE eye is a very complicated optical instrument, but for practical purposes it may be considered a condensing lens which converges the rays of light that pass into it and focuses them upon the retina. The various parts which are concerned in this process are: the cornea, the aqueous, the crystalline lens with its anterior and posterior surfaces, and the vitreous. Behind this we find the retina, which receives the visual impressions, and the choroid, which supplies the nutrition. The sclera is the main supporting coat of the eyeball and is seen in the front as the "white of the eye." It is covered in turn by the conjunctiva.

What is Refraction?

The process of bending the incoming rays of light so that they fall on the retina and give a clear visual image, is called refraction. In the ideal, or emmetropic, eye rays of light from a distant object are perfectly focused upon the retina when the eye is completely relaxed. But in the majority of cases this ideal condition does not exist, and in a narrower sense, refraction is usually spoken of as the correction, by means of glasses, of these deviations from the ideal. The principle of refraction will be explained under the consideration of the three main deviations from emmetropia: hyperopia, myopia and astigmatism.

* Presented during the series of study meetings on Medical Social Service in Eye Clinics arranged by the Committee on Development of Social Service in Eye Clinics of the Medical Social Service Section of the Welfare Council of New York City.

The emmetropic eye can see clearly in the distance when the eye is completely relaxed, but what happens when the gaze is shifted to a nearby object? If the eye remained relaxed the incoming rays would fall behind the retina and a blurred image would result. This is where accommodation plays its part. Accommodation is the act of focusing so that incoming rays fall on the retina. It is accomplished by the involuntary action of the ciliary muscle which surrounds the crystalline lens. When this muscle contracts, it permits the lens to become rounder and stronger in its converg-



Normal Eye—rays focus correctly on retina

ing power and thus shortens the focus of the incoming rays so that they fall on the retina and give a clear image. The act of accommodation performs only this one function, i. e., shortening the focus of incoming rays. It cannot lengthen the focus any more than is natural for each eye when the accommodation is relaxed.

Man's eye at birth is short in length and the lens is well rounded, but as growth proceeds, the eyeball lengthens out and the lens becomes flattened. These two processes take place simultaneously so that a proper relationship between the refractive power of the lens and the length of the eyeball is maintained. Very often, however, the lengthening of the eyeball fails to keep pace with the flattening of the lens and as a result we have the focus of the in-

coming rays falling behind the retina, because the retina falls short of its normal position. This is called hyperopia, or farsightedness. On the other hand, the lengthening of the eyeball may go on beyond its normal development and the focus of distant objects will fall short of the retina because the retina has gone beyond its normal position. This occurs in myopia or nearsightedness.

Farsightedness

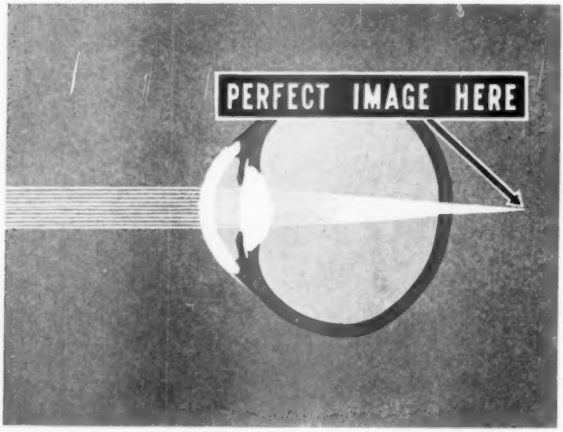
Hyperopia means "beyond the eye." When the hyperopic eye is relaxed and looks at distant objects, the focus of the incoming rays does not fall on the retina, but behind it, thus giving a blurred image. But we have seen that when such a condition occurs, accommodation comes into play and brings the focus up to the retina, and this is exactly what happens in the hyperopic eye. Because the hyperope always gets a blurred image for distant vision when his accommodation is relaxed, he is always using a small part of it; the amount of accommodation required depending upon the amount of hyperopia. It is this constant use of the accommodation which gives rise to the symptoms in hyperopia.

If the hyperopia is small, the constant accommodation is small and there may be no symptoms. But as the hyperopia increases there is a greater demand upon accommodation and because of this, the patient feels tired towards the end of the day. Close work is especially bothersome, because in addition to the constant drain upon the accommodation for distant vision, there is an extra demand upon it for close work. The accommodation is already somewhat tired because of its continuous use for distant vision and when the extra amount is required for close work, the symptoms of fatigue set in. The indefinite term "eyestrain" is used to explain these symptoms of accommodation fatigue and embraces all the symptoms from a slight tired feeling at the end of the day to terrific headache and reflex nervous disturbances.

The boy at school may be listless and inattentive because application to his books requires too much effort of accommodation. He finds it much easier to look out of the window and far, far away where there is less demand upon the accommodation. With a higher degree of hyperopia he may find that after a certain amount of close work he has a slight headache. With still greater hyperopia

there is actual blurring of vision for close work and more headache, and as the hyperopia increases, so do the symptoms develop into irritated eyes, sensitiveness to light, pain behind the eyes, occasional blurring of distant vision (especially when the patient is tired), dizziness, nausea, occasional double vision, reflex nervous disturbances, and perhaps muscle imbalance.

In the very high degrees of hyperopia, the accommodation is sometimes inadequate to bring the focus up to the retina, in which case the patient gives up accommodating, thereby suffering none



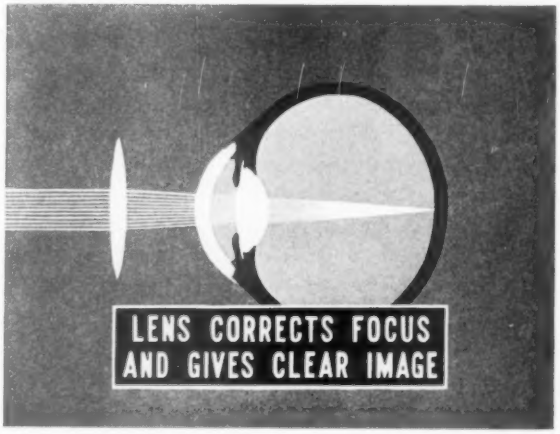
Farsighted eye—blurred vision

of the symptoms of accommodation fatigue, but instead, enjoying poor vision. Indeed, the vision is so poor in these cases that it is necessary to bring the work very close to the eyes in order to get a larger image on the retina in order to interpret it at all. These patients may appear to be nearsighted but a refractive examination will immediately disclose their excessive hyperopia.

The principle of correction of hyperopia is simply to replace accommodation by a converging lens to be worn in front of the eye. Accommodation is effected by making the crystalline lens more powerful, more converging. If a converging lens is placed before the eye, the incoming rays will be partly bent as they enter the eye and there will be less work for the accommodation to do.

The proper proportion between the correcting lens and the amount of work that the accommodation is left to do is a matter which the oculist has to consider for each individual patient. In small amounts of hyperopia, he may prescribe a rest glass, i. e., a glass to be worn to relieve accommodation just during close work. Larger errors will require that the glass be worn all the time.

The prognosis in hyperopia is good as regards the vision. The blurring of vision will cease as soon as the accommodation is relieved by glasses. Without glasses it will recur as soon as the strain



Farsighted eye corrected by converging lens—clear vision

upon accommodation reaches a certain point. Continued use of the eyes without correction will seldom impair the vision permanently, but the symptoms of strain, if unrelieved, may make a nervous wreck of the patient. Fortunately the symptoms respond like magic to the relief of accommodation. Hyperopia does tend to decrease slightly as the patient grows older, but the change is so small that the promise of eventually going without glasses should not be held out to the patient.

The family and the patient are prone to believe that as long as the vision is normal there is no need for correcting glasses, but we have seen that this normal vision is obtained at the expense of an abused accommodation. They should be made to understand that

the glasses are prescribed not so much to improve the vision, as to relieve the eye of too much effort in seeing. It is not necessary to wear glasses for hyperopia all the time. Theoretically it is better to do so, and give the accommodation a maximum of rest, but practically the patient is well served if he will wear his glasses whenever he is doing any close work or whenever there is any suggestion of fatigue.

Nearsightedness

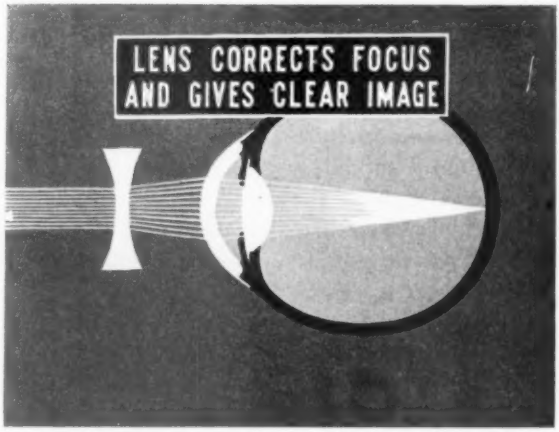
Myopia is another story. It is essentially a disease process in which the supporting coats of the eye lack the normal resistance and allow the length of the eyeball to go beyond its normal limits. The focus of the incoming rays is thus in front of the retina and distant vision is blurred. It is only when the object is brought closer to the eye that rays from it are focused upon the retina, and the higher the myopia, the nearer the object must be to be seen distinctly. The myope never uses his accommodation for distance because the incoming rays are already focused in front of the retina and accommodation can only make the focus shorter, not longer. Consequently, the myope does not suffer any of the symptoms of accommodation fatigue. He complains first of poor distant vision, but his near vision is perfect.

In the milder forms of myopia there may be a rather slowly progressing increase in the length of the globe which causes progressively poorer distant vision and perhaps a few spots before the eyes. Eventually the increase slows down or stops altogether and the patient is able to enjoy good vision with the aid of glasses.

In the malignant form of myopia, the lengthening of the eyeball keeps on increasing apparently uninfluenced by any form of treatment. The increasing size of the globe often makes it difficult for the patient to turn the eyes in, as in the act of reading. When the effort becomes too great, single binocular vision is given up, the image is suppressed in one eye and that eye is allowed to swing out. The retina becomes stretched and torn by the elongating process and hemorrhages may appear throughout the retina and choroid. The retina often becomes detached. The vitreous is pulled away and becomes fluid with opacities which the patient sees as spots before the eyes. The degeneration extends to the lens

causing it to dislocate and in the ultimate stage the eye becomes a degenerated mass.

The refractive correction of myopia is opposite that of hyperopia. Because the incoming rays from distant objects focus in front of the retina, they have to be diverged to throw the focus farther back. This requires a minus lens which separates parallel rays of light. With the proper minus lens the myope's vision can be brought up to normal unless there are degenerative changes in the back of the eye. Of course, as soon as the myope can see



Nearsighted eye corrected by diverging lens—clear vision

clearly in the distance, any object brought in closer will focus behind the retina and he will have to use his accommodation to bring the focus up to the retina, just as the person with normal eyes does. As a matter of fact, when the myope is fully corrected his eye is made artificially emmetropic. Without his glasses the myope was accustomed to accommodate very little, if at all; with his glasses he must accommodate whenever he looks at anything but distant objects. This unaccustomed use of the accommodation may be bothersome at first and the patient will be tempted to remove his glasses when he does close work, but this would defeat part of the therapeutic value of wearing the glasses. It is commonly believed that in early cases of myopia a full use of the accommoda-

tion will slow up and sometimes check the progress of the disease. The proper action of the ciliary muscle is supposed to aid in the circulation of fluids in the eyeball and prevent stagnation and increased intraocular tension which tends to increase the length of the globe. It has been definitely shown in children that a full correction of their myopic error, with glasses worn all the time, will often halt the progress of myopia. Therefore, the glasses should be worn for both distance and near.

Many of the early cases of myopia, especially in school children, are seen as a direct result of continued close work. These are not necessarily true myopia, because there are no degenerative changes in the eye, but are often merely a spasm of accommodation. They are usually corrected, if seen early, by insisting upon less close work and a proper reading distance. Sometimes it is necessary to relax the accommodation by the use of drops, when it may be found that the child is actually slightly hyperopic. Persistent abuse of the accommodation in this way may result in permanent changes, so that in time it becomes unable to relax to its normal state of rest and we have a myopia due to spasm. With proper care this should never increase.

Myopia proper should be treated as a constitutional disease, and general hygienic supervision should accompany the ocular treatment. Any congestion in the coats of the eyeball will tend to distend them because of their inherent weakness, and one of the chief causes of congestion in the head and neck blood vessels is poor posture. Standing and sitting, the myope must watch his posture. He should never read in bed. Illumination must be of the best, and the best means avoidance of glare as well as sufficient intensity. Poor illumination requires holding the book closer which puts a strain on the converging muscles, which, in turn, compress the eyeball. Constipation should be avoided. In fact, the myope deserves and requires the best in general hygiene, with particular attention to his reading conditions. The limitation of close work will depend upon the amount of myopia and the progress it is making.

In the smaller amounts of myopia where the progress is not marked and correction with glasses gives normal vision and no discomfort, the patient may be able to carry on as well as his

brother hyperope. But where the disease is progressing fairly rapidly, he must be discouraged from sedentary occupation, especially where close work is involved. The simple out-of-door life is best for him. Physical strain should be avoided, such as piano-moving or boxing, for fear of detaching the retina. Good simple food, plenty of fresh air and rest and a general toning up of the whole system is the best insurance for the high myope.

The prognosis in low degrees of myopia is good. Glasses will correct the vision and good general health will safeguard the health of the eyes. Where the myopia progresses the prognosis must be guarded. A slight progress in the early years of life may not continue and the patient will suffer no ill. But where the progress is definite and rapid the prognosis is very bad. It may be necessary to change the patient's occupation and whole course of life. It will always be necessary to curtail close work or forbid it altogether. The possibility of complete blindness or industrial blindness should always be borne in mind.

The family must be made to understand the general character of myopia in its worst form. General living habits, with strict attention to fresh air, illumination, rest, out-of-door activities and curtailment of close work must be emphasized.

Astigmatism

Astigmatism is a refractive error due to the shape of the eye. The different meridians do not have the same focus and for that reason, the patient cannot get a clear image on his retina. All the meridians may be hyperopic, that is, they may all have their focus behind the retina, but because they do not have their focus in the same place, the image is distorted, even though accommodation be called into play. Accommodation cannot correct astigmatism because it cannot change the focus of one meridian without changing all the others equally. In myopic astigmatism where there are different foci in front of the retina, accommodation would be of no use anyway. In mixed astigmatism, some of the meridians have their focus in front of the retina, and some have their focus behind the retina. In every case of astigmatism the image is blurred.

When the astigmatism is very small (and most of us have a small physiological amount), there may be no conscious blurring

or distortion, but in higher amounts it will be noticed that an object appears fuzzy in one direction. This blurring may not prevent the patient from seeing 20/20 because he has learned from experience to fill in the missing or blurred parts of letters, but persistent use of the eyes will cause discomfort. Even though the accommodation cannot correct astigmatism, it will make every effort to do so, especially when the astigmatism is hyperopic. As a result the patient will suffer from accommodative strain. Fully sixty per cent of functional headaches have been attributed to astigmatism, especially in the lower degrees. Reflex nervous disturbances are fairly common. One patient at the Infirmary volunteered the information that before he got his glasses for astigmatism he had been subject to fits of an epileptiform nature. Glasses cured him.

In the higher degrees where the vision is cut down, the patient usually goes to the doctor to see what is wrong, but in the lower grades, every attempt will be made to accommodate or twist the head to get better vision. When the astigmatism is off axis, i. e., not vertical and horizontal, there is liable to be a certain amount of head tilting, and Gould has shown a definite relationship between some cases of astigmatism and curvature of the spine. Some men believe that low grades of astigmatism are responsible for the beginning of myopia because of the attempt to correct it by accommodation.

Astigmatism is corrected in only one way, by the use of cylinders. A cylinder is a glass which converges or diverges the incoming rays of light so that it will correct the meridian at fault and not affect the meridians which need no correction. When the correction for astigmatism is worn the patient sees the image erect and clear and is soon relieved of his subjective complaints.

The prognosis in astigmatism is good as regards the vision, when the glasses are worn. It should be emphasized, however, that while the wearing of glasses will correct the symptoms of astigmatism, it will not correct the underlying fault, that is, the asymmetrical shape of the eye. It may not be possible to give the full correction in the first pair of glasses, especially when the amount of astigmatism is fairly high. In such cases the highest comfortable correction should be given with the idea of increasing it to the full

amount subsequently. Naturally, as soon as the glasses are removed, the patient gets the same old blurred image on the retina. He should be made to understand that his astigmatism proper cannot be corrected by glasses.

As a rule, the oculist will instruct the patient in the wearing of his glasses for whatever error he may have. There is no hard and fast rule that will apply to all patients; in general, correcting glasses for astigmatism and myopia should be worn all the time, while the correction for hyperopia and the wearing of it is determined by the needs and complaints of the patient.

Prevention of Blindness in Illinois

Audrey M. Hayden

WHAT the State of New York does to protect eyesight was told in the last issue; we now present a picture of sight conservation work in Illinois; and the efforts of other states will be chronicled in future issues

THE program of the Illinois Society for the Prevention of Blindness is fivefold: Preventing blindness among newborn babies; conserving vision among school children and preschool children; control of trachoma; research and education; and legislation.

The Illinois Society is not a case-working organization but a demonstrating agency whose function is to convince state and city organizations of the need for and the practicability of prevention of blindness.

Ophthalmia Neonatorum

For years the Illinois Society for the Prevention of Blindness furnished an hourly nursing service for ophthalmia neonatorum cases in the city of Chicago. During the past ten years 1,294 cases have been rushed to hospitals by our nurses where immediate and drastic treatment was administered to their eyes. All these babies were saved from blindness.

Last year our Society turned over to the City Board of Health of Chicago a trained worker on ophthalmia neonatorum and the last city budget included her salary. This worker not only hospitalizes the babies, but investigates all midwife cases where there has been an incidence of ophthalmia neonatorum thus educating the midwives to the necessity for prophylaxis. Our organization is of the opinion that isolated cases of prosecution of midwives will never solve the problem of ophthalmia. We feel that the present

statute in the state of Illinois is entirely inadequate and that blindness among newborn babies will never be stamped out until the law in regard to the treatment of the eyes of newborn babies is made mandatory. More will be said of this subject under legislation.

Beginning September 1, 1931, two of our nurses started on a county organization program on ophthalmia. This program includes interviewing every hospital in each county to see whether or not they will accept ophthalmia cases; checking the birth certificates in each county seat to ascertain which doctors are meticulous about the use of a prophylactic and which are not; acquainting the women's clubs, parent-teacher organizations, service clubs, the organized medical profession and the organized public health agencies with the incidence of ophthalmia in their county and in the state and enlisting the help of the medical profession to better conditions for newborn babies in Illinois. We were delighted with the fine spirit of co-operation which we found when we approached the Chicago hospitals. We also plan to visit all the midwives.

Conservation of the Eyesight of School Children

An important part of our work is the examination of the eyesight of school children. During the past year we have worked in the following towns:

	Number Examined	Number Found Having Eye Defects	Sight-Saving Cases
Decatur	1,414	259	15
Deerfield	38	9	0
Elgin	402	127	13
Evanston	1,184	226	6
Glencoe	939	59	2
Highland Park	305	31	4
Highwood	97	15	0
Hubbard Woods	199	53	0
Joliet	323	126	8
Kane County	210	32	2
Lake Bluff	45	7	0
Lake Forest	258	20	1
Springfield	2,963	590	14
St. Clair County	4,927	237	5
Wilmette	93	11	3
Winnetka	199	60	0
Totals	13,596	1,862	73

Besides these examinations made outside Chicago, the Prevention of Blindness Department of the Chicago Board of Health tested the visual acuity of 9,134 children, of which 2,770 were found to have defective vision. Of this number 109 pupils were recommended for sight-saving classes.

In making a survey of the eyesight of school children our nurses first approach the county medical society and enlist the interest of the local doctors in our program. They then visit all eye men in the district explaining the type of children for whom we are searching as possible candidates for sight-saving classes. They also confer with all the optometrists explaining to them the sort of children we want and urging co-operation in sending pathological cases through to an oculist. The entire school board is consulted and the work explained to them and, with their permission and that of the superintendent, we enter the school system.

In examining the eyes of the school children in a given school our nurses explain to the teachers and to the school nurses the sort of children for whom we are searching and ask that they send to the examining room all children suspected of having eye defects, all strabismus cases, all nystagmus cases and all glasses cases. We use the preschool technique on first and second grade children and the regular Snellen chart on the upper grade children. Each principal is furnished with the list of eye defects in the building and the school nurses are furnished with similar lists.

The children found having defective vision are then routed through the school nurses to oculists for examination and correction. We find that our work always stimulates eye corrections in any given territory. After the ocular reports have been received on the children, the sight-saving class candidates are set aside and home calls are made by our nurses on the parents of these children in order to urge them to co-operate with the local school board by placing the children in sight-saving classes.

The school board is asked to select one of its best teachers to be sent to a special course on sight-saving class work. No class in Illinois, outside of Chicago, has opened without a trained teacher and the Illinois Society for the Prevention of Blindness has co-operated with the National Society for the Prevention of Blindness and the University of Chicago in filling the classes at the summer

course for the training of sight-saving class teachers. Thirteen teachers from Illinois were trained for sight-saving work at the various courses this summer.

The superintendent of schools is then furnished with a complete list of the best sight-saving class equipment and specifications for a sight-saving classroom, natural and artificial lighting, painting recommendations, etc.

In the past two years classes have been opened in: Joliet 2, Rockford 2, Rock Island 2, Aurora 1, Evanston 1, Elgin 1, and Springfield 1. We hope to open in Peoria and Decatur in February. There are now 28 classes in the city of Chicago.

At three months' intervals our nurses go back and check over the original list of defects with the school nurses in order to have a complete record of all corrections made to date. In this way active interest is stimulated in getting 100% corrections. This is always the most difficult part of a survey and the only thing, we feel, which justifies it. Of the 1,862 downstate children with visual defects, 897 have already had corrections.

In every town where we have made surveys of the eyesight of school children, we have also observed the lighting of the school rooms. Five measurements have been taken with a foot candle meter with natural and five with artificial light. Superintendents have been very much interested in these lighting surveys and they have resulted in many changes for the better in both natural and artificial lighting in the schools visited. In many cases, at our recommendation, the seating and the curtains have been changed. We have furnished the superintendents with minimum standard requirements for natural and artificial lighting and we feel that a great deal of good will result from the interest shown.

Control of Trachoma

The lower end of Illinois, lying between Kentucky and Missouri, is a part of a large area which has always had a high incidence of trachoma. In both Kentucky and Missouri there has been state and federal control of trachoma over a period of years. Illinois, however, has never had any definite control program set up. In 1920 the Illinois Society for the Prevention of Blindness, together with the State Department of Health, the American Red Cross,

the State Department of Public Welfare and the Illinois Eye and Ear Infirmary, co-operated on a survey of trachoma in southern Illinois. Although the findings were very important, nothing was done about them because of a change in state administration.

In 1928 the Illinois Society for Prevention of Blindness made an intensive study of the causes of blindness on the Blind Pension Roll of the state of Illinois. It was found that in the southern part of the state the incidence of blindness from trachoma on the Blind Pension Roll was very heavy. We therefore suggested to the State Board of Health that they ask federal authorities into the state to co-operate with us on some diagnostic clinics in order to determine the amount of trachoma in the southern part of the state and its importance as a public health problem. After a year of conferences, the federal authorities were invited in. Four southern counties—Williamson, Union, Saline and Gallatin—were taken for the survey because in these counties more cases of trachoma appeared on the Roll than in any others. Two nurses from the Illinois Society for the Prevention of Blindness did all the field work for the clinics. The clinics were manned by doctors from the Federal Hospital at Rolla, Missouri. Six clinics were held:

June 16th	Herrin	102 reported
June 30th	Marion	96 reported
July 12th	Harrisburg	191 reported
July 12th	Shawneetown	
July 30th	Jonesboro	178 reported
July 30th	Dongola	
	Total	567

Of 567 examined, 252 active trachoma cases were found, a number equal to any reporting at clinics in similar regions of Kentucky and Missouri. It was therefore definitely established that trachoma presented as serious a problem in this state as in either of the adjoining states where it had been thought necessary to set up a control program. The State Board of Health immediately put a permanent nurse in the field, and hospitalization of the 252 cases was begun.

The nearest hospital for work of this kind was the Illinois Eye and Ear Infirmary in Chicago, over 300 miles away from the district where most of the trachoma was occurring. It was very diffi-

cult to persuade trachoma sufferers to make the long journey to Chicago, and even more difficult to prevail upon them to stay after they got there. After a year's work on this problem the State Board of Health, the Illinois Eye and Ear Infirmary and the Illinois Society for the Prevention of Blindness have decided that some sort of a small unpretentious hospital must be put in the southern part of the state to accommodate these forlorn people who so badly need treatment to prevent blindness. The Illinois Society for the Prevention of Blindness has been approached to raise the money for such a hospital and we have already undertaken this project. We hope that before another year is passed we shall see such a hospital established and flourishing in the southern part of Illinois. We feel that if we are able to bring about such a solution of the trachoma problem it will be an important contribution to prevention of blindness in Illinois.

Research and Education

Our educational work is done through lectures, moving pictures, letters and through our literature. More and more we are called upon for educational talks and more and more are there requests for copies of our literature and reports.

During the winter of 1932 we plan to hold joint meetings with the medical social service workers of Chicago. Dr. E. V. L. Brown and Dr. William H. Wilder have consented to get together a group of lecturers who will talk to these workers on the various diseases of the eye. The National Society for the Prevention of Blindness has already ably demonstrated the value of such a project.

During the past three years we have conducted three studies.

Blind Pension Roll Studied.—A study of the causes of blindness on the Blind Pension Roll of Illinois showed that there were 3,517 people on the Roll. Of this number we were able to obtain diagnoses:

From oculists on	1,751
From general practitioners	990
From pensioners	438
From optometrists	2
Total	3,181

We considered 137 of the diagnoses unsatisfactory and we were unable to find at addresses given by the county clerks 199, which accounts for the 3,517 on the Roll at that time (June, 1928).

SUMMARY OF CAUSES OF BLINDNESS ON BLIND PENSION ROLL OF ILLINOIS

Opacities of cornea			
From trachoma	339		
From other causes	321	660	
Cataract in all forms		716	
Affections of uveal tract		113	
Affections of retina		72	
Glaucoma and complications		295	
Affections of optic nerve and complications		595	
Trauma		388	
Post-operative		187	3,026
All other causes			491
Total			3,517

This report was read before the Ophthalmological Society of Chicago on May 30, 1931, and was later published for distribution. As a result of the findings on the Blind Pension Roll the trachoma survey was made in 1930 which has had far-reaching results.

Midwifery Study.—During 1929 a study was made of midwifery in Illinois. We used as a basis for this study the only list of midwives available for the purpose—namely, a list in the Department of Education and Registration dating back to 1878 without correction of any kind. Our findings were briefly as follows:

Total number of midwives practising with licenses on September 1, 1929		393
Total number of midwives known to be dead		527
Total number of midwives found to have moved from the state		31
Total number of osteopaths registered as midwives in Cook County but apparently not practising		45
Total number of whom we were unable to get information and whose names do not appear on the birth records for the past 5 years		2,190
Total		3,186
Total number of midwives found practising without licenses	114	
Total number of active midwives in Illinois	507	

Copies were collected of the laws regarding midwives in every state of the Union and all the countries abroad, together with the regulations for the practise of midwifery and the training of midwives in all foreign countries. This survey was used by the Governor's Committee on Child Welfare in the formulation of its program at the last legislature.

We are interested in better training and supervision of midwives in Illinois because we want better control of ophthalmia neonatorum.

Compilation of Laws.—In the past year a compilation of ophthalmia neonatorum laws was made by our office. These laws have been placed in the hands of Dr. Ernst Freund of the Law Department of the University of Chicago, who will use them as a basis for a legal study.

Legislation

In the legislative session of 1929 the Illinois Society for the Prevention of Blindness fostered a bill which arranged for state subsidy of sight-saving classes for children with defective vision in the public school systems of the state. This bill set forth certain qualifications for teachers; placed the supervision of sight-saving classes in the Department of Public Instruction, although the actual subsidy of the classes is in the hands of the Department of Public Welfare in accordance with state codification; and raised the subsidy for such classes to $250 per year per child. At that time the Legislature appropriated $49,000 for such classes in Illinois. This was $20,000 more than had ever been appropriated before.

At the session of 1931 the Illinois Society for the Prevention of Blindness sponsored a bill which made mandatory the use of a prophylactic in the eyes of babies at birth. This bill had the support of the State Medical Society, the State Board of Health, the State Parent-Teacher Association, the State Federation of Women's Clubs and the Lions Clubs. The bill was bitterly fought by the Christian Scientists and other anti-medical groups who literally flooded the Legislature with protests against it. On March 3 the bill passed second reading and the Christian Science amendment was voted down 112 to 14. This amendment

provided that if the parents or guardians objected to the use of a prophylactic on account of religious beliefs, they would be exempt. On March 10 the bill passed the House by a vote of 114 to 5 and was referred to the judiciary committee of the Senate. At the hearing before this committee the Christian Science amendment was voted down 11 to 7 and the bill recommended to pass. On April 27 the bill passed second reading and the Christian Science amendment was again voted down 27 to 12. The next day the bill passed the Senate by a vote of 36 to 6.

The bill was sent to the attorney-general on May 7 and was returned to the governor on the night of May 18, the attorney-general declaring it unconstitutional in that "the police powers of the state did not cover the situation and that individuals had certain fundamental rights which must be protected." On May 19 Governor Emmerson vetoed the bill and it was sent to the House that afternoon with the veto message. The House immediately took action which has not occurred in 40 years in the Illinois legislature, namely, the bill was passed over the governor's veto by a vote of 116 to 15. It was immediately referred to the Senate where 34 votes were needed to pass over the governor's veto. The next morning the bill came up for vote and only 28 votes were mustered. Thus the bill was lost.

Strong editorials defending the bill appeared in no less than eight papers in Illinois. The June 1 issue of the *Journal of the American Medical Association* carried a two-page editorial and the July mid-monthly number of the *Survey* carried another. Many lawyers sent in requesting copies of the bill that they might make a study of its validity. The Legislative Reference Bureau had assured us that the police powers in the state of Illinois were unlimited where the loss of life and limb was concerned and that loss of eyesight was ranked as equivalent to loss of life or limb. There can be no doubt that a great deal of educational work resulted from the attempt to put the bill across and we can only hope that next time a similar bill will fall into kinder hands and we shall yet see the day when everything legislatively possible will be done to prevent blindness among newborn babies in Illinois.

Certainly no group of legislators could have given kinder treat-

ment to a prevention of blindness agency than the 204 men and women in the House and Senate of Illinois. That the bill passed the judiciary committees, made up of the lawyers of both bodies, where it received careful consideration, is a potent comment on its constitutionality. The Legislature of 1931 voted $139,500 for sight-saving classes in the state of Illinois. As this is almost three times as much as last biennium, it will readily be seen how friendly the Legislature is to our work.

As James Weber Linn said in commenting on the veto of our Baby Bill, "It takes imagination to appreciate a prevention program. Nobody without imagination ever lies awake at night worrying about the preventable misery of others." And so, really to appreciate prevention of blindness, one must have imagination enough to appreciate the horror of blindness. Helen Keller said, "Of course better work for the blind is going forward all over the country to lighten the burden of darkness; but however merry our blind children, however brave and self-reliant our blind men and women, could the utmost dreams of education for the sightless be realized, the dark is still the dark, and blindness an irremediable calamity. Therefore, I say, let us check this dread disease and danger. If one-tenth of the money we now spend to support unnecessary blindness were spent to prevent it, society would be the gainer in terms of cold economy, not to mention considerations of happiness and humanity."

Good Eyesight in Industry*

Herman P. Davidson, M. D.

APART from humanitarian considerations, Dr. Davidson points out, industry has learned that money spent in guarding the eyesight of workmen is a good investment; it reduces the expense of accidents, salvage, compensation, etc.

IN THE consideration of safety in industry, the importance of eyes cannot be overestimated. It is not only necessary to guard machinery and wear goggles, but to have good eyesight. While the vision of many is defective, fortunately most defective vision is correctable. In middle life, from forty on, in fact, the focussing power of the eye is less elastic. Very often this may be corrected by wearing the proper glasses. It is at this age that many of us must wear two-in-one glasses, or bifocals, to assist us in near and far vision.

In my organization, during eight years, approximately 11,000 pairs of eyes were examined at the Pullman Car Works, with 25,843 separate visits. Of these, 42 per cent achieved normal vision (some had normal vision while others required glasses to make them normal). Fair vision was obtained in 37 per cent with or without glasses. This makes 79 per cent with good or fair vision in both eyes—leaving 21 per cent with poor or bad vision in one eye or both, that glasses could not help. Of this 21 per cent, 0.6 per cent were one-eyed men. This summary, on its face, looks as if the Company has nearly one man of every four with at least one bad eye; but that is not the case. Some of these men came in for pre-employment vision test, and were rejected. Others were employees of interlocking companies, whose sight had failed and were sent in for opinions and reports. Then there are the employees

* Extract of address delivered before the National Safety Convention in Chicago, Illinois, October 14, 1931.

who have been pensioned off and are entitled to treatment. So there is no definite way to find out what percentage of those working have defective sight, and actually the figure is less than 21 per cent.

Good eyesight is essential in industry because it increases the man's efficiency, relieves him of eyestrain, makes him less likely to have accidents or cause accidents. It reduces the employer's compensation payroll and it reduces the salvage bill. This far overshadows the cost of medical care and the cost of protective goggles in dollars and cents—not to speak of the humanitarian phase of the question. Some companies sell goggles to their employees, but our organization, as well as the interlocking companies, gives them prescriptive goggles free of charge.

EYE REQUIREMENTS AT SELECTED POSITIONS IN AN INDUSTRIAL PLANT*

Hazardous occupations		Without glasses	With glasses
Crane operators	Electrical Locomotive Mono-rail Hook-ons	20/30 or better	
Transfer table	Operators Helpers Hook-ons	20/40	20/20 one eye 20/30 other
Transportation†	Train crews Truck drivers Tractor	20/20	20/20
Machinery Includes helpers and operators	Band sawyers Press Punch press Shear	20/40	20/30
Wood working	Shapers Gainers Sawyers Joiners Stickers	20/40	20/30
Welders		20/40	20/30

* Pullman Car and Manufacturing Corporation, Chicago, Ill.
† Color tests are also given to these men.

An employee who sees well is less likely to ruin his work and thereby saves salvage. He has a fraction of a second more to get out of danger and he is less of a hazard to his fellow worker. Furnishing a pair of vision correcting goggles, or a dozen pairs, won't make a lazy man change his ways, but it can help the conscientious man who has poor vision.

The oculist can do much for safety and efficiency. He can take men off dangerous occupations. For instance, a band sawyer with bad vision and trifacial neuralgia is transferred from the saw. There is no way of telling whether this man would have been a compensation case, but in his new job he can't tempt Providence. In our plant certain occupations require a set standard of vision. For instance, crane operators hook-ons, transfer table operators, train crews, punch press, shear and band sawyers, and in the wood working, shapers, gainers, sawyers, joiners and stickers, must pass annual eye examinations.

The compensation bill is reduced through prompt attention and skilled care soon after any accident. This immediate attention has eliminated the "picker" and other hazardous first-aid measures from the plant. The oculist also has a definite record of vision on entrance, and if the eye is bad at that time, he can definitely refute a false injury claim made later. This happens far more frequently than you would imagine. An employee with previously good vision is injured while on his own time in a broken wind shield injury. He is off some time before returning. He is sent to the oculist before being re-hired to "get a new pair of goggles." He does and his injury and vision are noted. Later he claims injury in the plant. As a result of rechecking each time hired, he cannot put over his false injury claim. In many such cases the record is a real asset to the company. Sometimes there has been a trivial injury on which the man could lay his claim, but he just as often says it is one eye that was injured, when in reality, it was the other. Of course, the legitimate injury case is paid fair compensation.

There is no way to check up accurate results from our better vision and goggle policy, for before accurate records were kept the men did not come in for trivial injuries but let the "pickers" remove the foreign substance. From 1916 to 1921, 30.8 per cent of all injuries that came to the dispensary were eye injuries (severe

and mild). From 1923 to 1930, 24.5 per cent of all injuries that came to the dispensary, including all trivial injuries, were eye accidents. In 1923, the first year the oculist was on duty, 843 eye injuries were reported of 21,327,130 work hours. This includes the severe accidents and very mild scratches. In 1930 there were 145 injuries out of 7,725,833 work hours, quite a considerable reduction when you compare the number of hours worked. Although most of these injuries are trivial ones, they are all counted.

It is interesting to note the gradual change of attitude of the men about goggles. They considered it an affront at first; but they now request them. If an injury does occur, there is generally an apology such as, "I was just wiping my goggles when something hit my eye." Formerly they expected to have eye injuries.

The safety program in industry benefits not only the company and its employees, but its influence extends far beyond the walls of the plant. Realization of the importance of good vision, of proper illumination and of eye protection and hygiene, is a contribution to society in preserving good eyesight and preventing unnecessary impairment of vision among the men and their families.

Organization of Sight-Saving Classes*

Gladys L. Dunlop

CHILDREN with seriously defective vision are a pedagogical problem which may be solved by the establishment of special classes, such as Miss Dunlop describes here; it is estimated that 5,000 of these classes are needed in the United States

A LARGE portion of the school population suffers from eye defects. Recent reports of the National Society for the Prevention of Blindness indicate that at least one child in one thousand should receive the benefits of sight-saving class training.

This special type of education grew out of the demand for a school program adapted to the needs of the children with seriously progressive eye defects and those who did not have sufficient vision to use regular school equipment though they were in no sense of the word blind.

The first class in the country was established in Boston in April, 1913. Owing to the many problems involved, the growth has been very gradual. It is gratifying to note, however, that during the past year there has been an increase of 7 per cent in the number of classes. Further efforts should be made to establish approximately 5,000 classes which are necessary if a satisfactory educational program is to be provided for the children with serious eye difficulty.

Perhaps the most difficult factor in the organization of a class is the selection of those who would profit by this very special type of training. In establishing the work for the first time, careful studies should be made in co-operation with the local health agency procuring correction and treatment for those suffering from serious eye defects.

Candidates for the classes are usually discovered through routine health examinations by teachers or nurses. An endeavor has

* Reprinted with permission from *The American School Board Journal*, August, 1931.

been made to set up guides which may serve all school systems in finding potential sight-saving class candidates.

Principles of Choosing Children

In connection with the summer course at the University of Chicago, 1928, several ophthalmologists who were familiar with the sight-saving program met in a conference with teachers and supervisors to consider guides which may serve in placing those, who, after having expert ocular services, need in addition special attention in the classroom. The following guides were formulated and since that time have been generally used by the various states and cities in classifying children:

1. Children having visual acuity of 20/70 or less in the better eye after proper refraction. In addition, the following are recommended as potential candidates:
   (a) Children in elementary schools having four or more diopters of myopia.
   (b) Inactive, subsiding (or regressive) cases, such as interstitial or phlyctenular keratitis, optic neuritis, trachoma, etc., in which some irritation may be present, provided the approval of the attending physician is given.
2. All cases must be considered individually.
3. Any child who, in the opinion of the ophthalmologist, might benefit by assignment to a sight-saving class, subject to suggestion for treatment and training by such oculist, and the acceptance of the educational authorities having charge of such classes.
4. It is assumed that all the children assigned to sight-saving classes have average normal mentality.

Physical Environment

Having determined the number of children for the class, careful attention should be given to the selection of a room. Since one room must serve several buildings, it should be centrally placed in the district and must also be convenient to transportation lines. If possible a newer type of building having correct lighting and modern equipment should be decided upon, thus minimizing the cost of opening a class.

A full size classroom is desirable in order to take care of the extra equipment which these classes demand and to provide sufficient space for these low visioned children to move about.

The best authorities on lighting state that in every classroom there should be "a maximum light with a minimum glare." A sight-saving classroom is selected and equipped with these essentials in mind.

Good lighting and other equipment help to make this a real sight-saving class

A northern exposure was for a long time considered best, for here the light is least variable and for this reason can be easily controlled. Most recent investigations have proved that an eastern exposure is more desirable since it gives the children some sunlight. Poor eyes are often a reflection of unhealthy bodies and every attempt is made to improve the physical condition as well as to provide proper working conditions.

The Lighting Problem

The glass area of the windows should be equal to one-fourth of the floor area. Windows should be at least three feet from the floor

and no nearer the front of the room than seven feet. They should also reach almost to the ceiling since we must depend on light from the top to light the far corners of the room. Unilateral lighting is always preferred. Wall tints are also considered important and from a lighting point of view should be finished in light buff with ceilings in cream.

Careful consideration is also given to artificial lighting. Indirect lighting was for a time believed to be the only satisfactory installation for sight-saving classrooms but too often not enough attention is given to maintenance which detracts considerably from the efficiency of the light. Observation and experience have determined therefore that the direct light, with totally enclosing translucent shades is most desirable.

The correct type of window shades provided a sight-saving classroom is of vital importance. According to the "Code of Lighting School Buildings," issued by the Illuminating Engineering Society, shades must perform several functions: (1) Diffuse direct sunlight; (2) control the illumination to secure reasonable uniformity; (3) eliminate glare from visible sky, adjoining buildings or from the blackboard.

These conditions are best met by equipping the windows with two buff translucent shades, each operating from the center. Care should be exercised, however, in installing them so that no light enters between the two rollers. Shades on fixtures which may be adjusted at any part of the window are sometimes supplied. However, these are not advisable since with very frequent adjustment they are soon in disrepair.

Essentials of Equipment

All furniture and woodwork in sight-saving classrooms must have a flat finish, since highly polished surfaces are a source of glare.

Movable desks with adjustable tops are necessary. The slanting top provides a proper focus and the pupil may at any time move the desk to a place where he may obtain the best light co[illegible]uering his own particular difficulty.

Special supplies for the class include soft cream manila paper (9 x 12 inches) such as is furnished in most art classes. The same type of paper should be purchased lined in green or black about

three-fourths of an inch apart. All written work is done with a soft pencil. Any good grade of soft drawing pencil is acceptable providing it produces a clear, even black line that does not smear easily.

Bulletin typewriters are also an essential part of the equipment of the classroom. Teachers use the machines to prepare certain material in large type. Furthermore, they are more satisfactory

Projects have as much a part in the sight-saving class program as in the regular classes

for the children's use. Typewriting is taught all pupils above the fourth grade, not as a vocation but as a means of saving eyes. Careful instruction enables the individual to master the keyboard within a few weeks. Following this, composition, spelling, or any form of written work may be prepared without involving the use of the eyes.

Books in twenty-four point type on cream paper are furnished all the classes. These are procured only from the Clear Type Publishing Company, Montclair, New Jersey.

Class Organization

Sight-saving classes should always be organized on what is known as the co-operative plan of education, the children doing all the study and written work in the special room with the sight-saving class teacher but reciting with those of normal vision. This provides social contact as well as academic competition.

The only deviation from the program as set up for regular classes is an elimination of such subjects as require considerable close eye work—art, library, and sewing. In the place of these, the special teacher provides different types of handcraft which do not involve close use of the eyes. Here the child has an opportunity to express himself and to learn certain activities which he may pursue outside the classroom and thus avoid engaging in those from which eye injury might result.

The greatest factor in the success or failure in any sight-saving class program is the teacher. No individual should be assigned without having had special training for the work. Intensive summer courses have been introduced at the University of Chicago, University of Cincinnati, University of Southern California, Buffalo Teachers College, Columbia and Tulane Universities. Such courses give consideration to ocular problems including anatomy, physiology and hygiene of the eye; eye diseases and the errors of refraction. With this information and a background of satisfactory teaching experience, the teacher can well adapt modern methods and materials to the needs of the sight-saving class child. Without this special training, a teacher is incapable of providing for individual differences with respect to eye conditions.

While education costs for the child with low vision are in excess of that for normally sighted children, this should not be a deterring factor when considering the organization of the classes. Special education costs less than academic failures and juvenile delinquency. Such are the inevitable fates of boys and girls with imperfect vision unless special provision is made for them, for the whole of life becomes distorted to the degree which the pupil suffers in attempting to meet life's situations.

Venereal Disease and Prevention of Blindness*

Louis Lehrfeld, M.D.

UNTIL recent years there was great reluctance to speak publicly and truthfully of the very close relation of the so-called "social diseases" to impairment of vision and total blindness, but the facts are becoming more and more frankly recognized and discussed

Ophthalmia Neonatorum

ONE of the most distressing and pathetic charges against humanity is that portion of the blind population which owes its ostracism from society to ignorance, indifference, and neglect. The disease I refer to is ophthalmia neonatorum. So simple a prophylactic as the instillation of a drop or two of silver nitrate in the eyes of a newborn infant is omitted by reason of prejudice, by reason of sentimentality, by reason of stubbornness, by reason of unwillingness to accept the teachings of those who know.

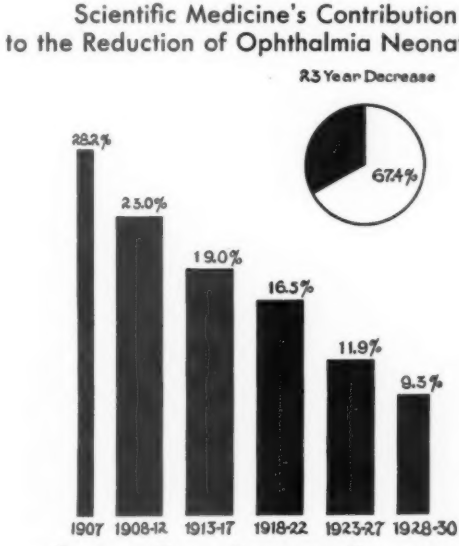
Some thirty years ago, 28 per cent of admissions to institutions for the blind in the United States were due to blindness from ophthalmia neonatorum.

There is need for educational propaganda, not so much by the medical profession, but by those generous-hearted lay persons who give their time and interest to aid in the enforcement of laws and in the education of the lay public.

There is no longer need to show proof that silver nitrate in one per cent solution, instilled in the eyes of the newborn, will definitely prevent ophthalmia neonatorum. In like manner we know that smallpox is positively prevented by vaccination; we know posi-

*Extracted from address delivered at the April meeting of the Lycoming County Medical Society.

tively that diphtheria can be prevented by toxin antitoxin; yet we find smallpox to be prevalent in certain parts of the United States, and we know that diphtheria exists in larger proportion than is consistent with our known methods of prevention; and so with ophthalmia neonatorum. In spite of the fact that we know how to prevent it, yet at the present time, approximately nine per cent of the admissions to the homes of the blind are among children who have been blinded by ophthalmia neonatorum.



BLINDNESS DUE TO OPHTHALMIA NEONATORUM
IN NEW ADMISSIONS TO UNITED STATES SCHOOLS FOR THE BLIND

The point at issue is: how can we reach every newborn babe with the view of carrying out the known and positive method of prevention of this disease? Surely much has already been done in the state of Pennsylvania by making it compulsory for midwives to use the prophylaxis essential for the saving of sight. Unfortunately there is no law which compels the physicians to make that instillation. There is, however, an unwritten law which makes every physician guilty of malpractice if he does not use the methods commonly accepted in his own locality. Surely no physician would like

to be questioned on the witness stand as to why he failed to use a prophylactic in the eyes of the newborn babe if that case would have resulted in blindness. Any difference of opinion from the accepted principles of the medical profession would not be accepted as an excuse in this instance. He could not bring to his defense any physicians who would be willing to testify that it is a good practice to omit such a prophylactic. Yet, one of our leading medical organizations in Philadelphia refuses to go on record as urging the passage of a bill which would make it mandatory to use a prophylactic at the time of birth. Personal pride, fear of loss of individual rights, and the fear of permitting the legislative bodies to dictate to the medical profession, have greatly impeded our progress in the complete elimination of ophthalmia neonatorum. And yet, we criticize Christian Scientists for combating the enforcement of laws which make vaccination compulsory, when physicians themselves will attempt to combat the enactment of laws which will require them to use a standard for the prevention of ophthalmia neonatorum.

It is impossible, of course, to establish compulsory laws of this kind in a state or country where freedom of thought and action is regarded as an inalienable right. In a state where it is permissible for any man, woman, or child to buy a dangerous firearm, it is to be expected that the people also wish their personal liberties to do as they please with their children's eyes. If these babies, however, had voices to speak and could appeal to our hearts for their right of protection to conserve and preserve their eyesight, I am sure that there would not be a single case of ophthalmia neonatorum resulting in blindness.

It would be ideal, indeed, if our public health program were so idealistic that every expectant mother would be required to undergo a physical examination to determine the presence or absence of infection. While the public health nurses in this state have done much towards rendering prenatal care in the interest of the baby, there are many thousands who never receive such inspection or observation; but even if all this prenatal work amounted to nil, still there remains the positive prophylactic method against ophthalmia neonatorum.

In a survey which I personally conducted in the city of Phila-

delphia, among the ophthalmia neonatorum cases reported over a period of ten years, I found that cases of ophthalmia neonatorum did develop in a small percentage of instances where silver nitrate had been used. If any of you here engaged in the practice of obstetrics will think for one moment how difficult it is to open the eyes of a newborn baby, you will at once understand that in a great many instances the silver nitrate never enters the eye but is allowed to remain on the skin surface of the lids and never reaches the conjunctival sacs for which it is intended. It is my thought, therefore, that the point to be stressed at this time is the teaching of nurses and of doctors how to open the eyes of a newborn baby sufficiently wide to instill the silver nitrate. This can readily be accomplished by drying the lids carefully with a piece of gauze and then wrapping the thumb of one hand and the index finger of the other hand with sterile gauze, separating the lids very wide and permitting someone else to instill the silver nitrate; or it may be done by one person, having wrapped the gauze about the thumb and index fingers of one hand, separating the lids, and then with the other hand, instill in the eyes; and if perchance the lids are still slippery and cannot be separated, it is a good idea to place the silver nitrate in the corner of the closed eye and then to attempt to open and close the lids as well as possible, permitting the solution to drain between the palpebral fissures. In most instances this will accomplish good results.

The second point in the prevention of blindness from this cause is a thorough treatment of the disease as soon as it develops. It has been a common experience to find nurses irrigating the eyes once every half hour or every hour and, on close observation, to discover that the irrigating fluid rarely if ever reaches the fornices of the upper lids. The gonococci, finding lodgement high up in the cul-de-sacs, multiply very rapidly and may destroy the eye within a very short time. It makes no difference what antiseptic solution is used, the irrigation must be thorough and complete.

In the absence of any other method, a bulb syringe may be used in which sufficient force is applied on the rubber ball to cause a steady force of fluid through the cul-de-sacs. Very often it is necessary to evert the lids in order to permit the free irrigation. I am positive when I state that every case of ophthalmia neonatorum,

when discovered early, can be completely cured. I am not recommending any particular type of germicide to be used against the cocci, but I do insist upon the thoroughness and the frequency of irrigation, because having freed the eye of all the pus, you, at the same time, reduce the number of bacteria present in the eye. Everyone knows how difficult it is to grow the gonococcus in artificial culture media. The human tissues, of course, with a normal body temperature are quite favorable to their growth. The virulence of the gonococcus is destroyed by a frequent irrigation. I personally prefer the use of 25 per cent argyrol instilled in the eye every half hour following thorough irrigation with warm boric acid solution. Between each flushing there must be constant applications of ice compresses. Atropine must be instilled in the eyes once a day in the effort to prevent plastic iritis in the event of perforation of the cornea.

The Prevention of Syphilis of the Eye

Another treacherous and preventable disease responsible for blindness is syphilis. I refer to the congenital forms of syphilis which produce diseases of the choroid, disturbances of the nutrition of the eyeball giving rise to optic atrophy and congenital cataracts, and to interstitial keratitis which, if untreated, may result in complete blindness.

There are no statistics available indicating the prevalence of congenital syphilis involving the eyes. My own hospital experience of sixteen years at the Wills Eye Hospital prompts me to estimate that varying grades of partial and complete blindness are far greater than even the most conservative estimates. The most frequent form which comes to the ophthalmologist for treatment is interstitial keratitis. As early as the age of four, most often under sixteen, and sometimes in young adult life, this form of congenital lues is a living monument of syphilis in one or both parents. Apparently healthy children, usually robust, rosy cheeked, laughing and playful children, become suddenly blinded, their eyes a salmon red, lacrimation quite profuse, their heads bent to obscure the light. A more pitiable experience cannot be encountered in the whole of medical diseases. Children, themselves innocent of wrong, are sufferers for the neglect of parents to secure treatment

before rearing a family. In this respect the prenatal clinic can be of service. All expectant mothers before the fourth month should have a blood test performed.

This disease points out the great service a hospital can perform to a community. More especially does it emphasize the need of an eye clinic in conjunction with every general hospital where children may not only be treated for congenital syphilis but where a follow-up system will make it necessary for every member in that family to submit to a complete physical examination and a Wassermann or other blood test to determine the presence or absence of lues in other members of the family.

Not long ago, we, at the Wills Hospital, treated our cases of interstitial keratitis until the patients had sufficient return of vision for practical purposes, or until the acute eye symptoms subsided. Patients then disappeared or returned to their homes believing themselves cured, or at least the parents thought no other treatment was necessary. The cure of the eye condition does not mean a cure of the lues. Failure to follow up these cases, failure to seek the presence of lues in the family, meant that other children in the same family returned later for treatment of the same disease. In other words, the hospital did not perform its full function by treating only the individual case until the eye symptoms were relieved. It soon realized its full responsibility in this respect and now we have a well organized skin clinic, so-called because it is a less embarrassing name for use in an institution. Surely the children are not to be marked as outcasts by referring them to a venereal disease clinic. Now every child with interstitial keratitis is considered from the standpoint of being a public health problem. Each brother and sister is brought to the clinic for study of congenital lues. Both parents are requested to report for a blood test.

This method has brought to our attention infected families who otherwise would have provided menace to the community. These same infected children would have been the parents of another generation of lues. I have in mind one instance. A child, aged 12, was brought to the hospital with interstitial keratitis two years ago. A younger sister and the mother had positive blood reactions. The older daughter with the acute eye disorder was

treated routinely by antiluetic measures. The mother and younger daughter were urged to undergo similar treatments but failed to do so. Several months ago the mother brought the younger sister to the hospital with an acute interstitial keratitis, which taxed our best efforts to restore vision even partially. This is an instance in which neglect to submit the younger sister to treatment two years ago resulted in partial loss of sight which will be permanent. Had treatment been given two years ago, it is likely that the child would have been spared the incapacity which she now endures.

I mention this case to show that an eye clinic or dispensary is not merely a place to refract eyes or administer the treatment of the patient who applies, but it must serve as a health center aiming to give the community the benefit of preventive medicine. It must not merely aim to get the patient well of his eye disease, but attempt to treat the systemic disorder which made itself evident in the eyes. This applies to luetic iritis, luetic choroiditis, and scleritis. It applies to focal infections which manifest themselves as iritis, scleritis, optic neuritis, and vascular changes in the choroid and retina. At the Wills Hospital we have a nose and throat dispensary, a dental dispensary, an X-ray department, neurological and medical services which fit into our plan of treating the eye not merely as an isolated organ, but a part of the body which may reveal disorders primarily in the organ of vision.

Editorials

Thomas Alva Edison

ON THE death of Thomas Edison, recently, the nation turned off its lights at ten o'clock in the evening for three minutes, to pay him tribute. It was a voluntary gesture, and everyone who did it must have spent the moments in the darkness considering the gratitude he owes Edison. The fact is we have grown so accustomed to the commodity which he perfected for us that we are not any more conscious of it than we are of the light nature affords us. And yet Edison has given us something that can be more reliable and more steadfast than natural light.

This gift of light, alone, is one of the greatest allies to society in its effort to conserve sight. The electric light today penetrates the home; the school; the office, factory, and mine; and the theater. It extends to the farthest corners of the earth. It assists silently and faithfully even in places where education has not yet made its inroads.

In addition to the part Thomas Edison played by developing the electric light, he participated, as a contributing member of the National Society for the Prevention of Blindness, from its very beginning, in the complete program for saving sight. Here was a man, tied by genius and unswerving interest to an impersonal and enslaving laboratory, who considered the needs of his fellowmen. His support remains an undying inspiration for those carrying on the work of preventing blindness and saving sight.

Somehow the picture one has of Edison is not that of a torch-bearer, going before the crowd. His natural modesty, his patience with the exactions of science, his laboratory method, all indicate retirement from the world rather than leading it. But if, indeed, Edison cannot be looked upon as having led us, he must be looked upon as having dwelt far ahead of us, shedding his light behind that we might see.

Eye Health in Industry

There is considerable romance attached to the loss of eyesight or the preservation of vision; for the eye has often been poetically called "the window of the soul."

Stripping these conceptions of all their glamour, there are good economic reasons—the chief of which is the loss of millions of dollars annually—why consistent effort should be made to preserve and nurture good vision.

The chief causes of impairment or destruction of vision may be briefly named as follows: (1) Mechanical injuries; (2) chemical injuries, including the effects of external irritants and corrosives, and poisons taken internally; (3) environmental influences; and (4) visual defects.

According to the records, mechanical injuries are the most frequent and costly type of injury, and include cuts, piercing wounds, contused wounds, burns, and the impingement of small particles of dust, metal or other substances on the outer structures of the eye.

Chemical injuries are brought about by the corrosive effects of various compounds which are accidentally splashed into the eye. This expression also includes the effects of certain poisons absorbed by the body, such as various alcohols, tobacco, arsenic, carbon bisulphide, lead, aniline, and others.

Environmental influences are mainly concerned with artificial and natural lighting. Such lighting should be of sufficient intensity, without the production of glare or shadow.

The importance of visual defects as factors in the safety and health of industrial employees is not fully realized. Some of these are amenable to treatment; others cannot be corrected by our present known methods.

It is now possible for any industry to adequately preserve and conserve the vision of its employees through the scientific appraisal of the above-mentioned sources of visual handicaps. Both the National Society for the Prevention of Blindness and the National Safety Council will be pleased to supply specific information on these subjects.

C. O. SAPPINGTON, M.D., DR. P.H.

Note and Comment

Annual Meeting of the National Society for the Prevention of Blindness.—The seventeenth annual meeting and conference of the National Society for the Prevention of Blindness was held during the morning and afternoon of November 19, in the Russell Sage Foundation Building, New York City. The usual conference program was curtailed this year to a morning session. A round table on Medical Social Work in Eye Clinics was presided over by Miss M. Antoinette Cannon, of the faculty of the New York School of Social Work. Miss Eleanor Brown, secretary of the National Society, opened discussion with a paper on "The National Society's Part in Training and Placement of Medical Social Eye Workers." Leading the discussion were Miss Amelia J. Massopust, of the Social Service Department of Bellevue Hospital and Miss Jeanne Wertheimer, of the Social Service Department of the Presbyterian Hospital.

It was agreed that the work and contribution of the medical social worker in eye clinics was most important in the prevention of blindness program, and suggested that this same training be opened to school nurses and health workers.

The annual meeting of directors and members of the National Society for the Prevention of Blindness was held during the afternoon. At the conclusion of the formal business which included a report of the Society's activities for the year from the president and from the managing director, a program on cataract was presented. Dr. William Campbell Posey, who presented the chief paper, is former president of the American Ophthalmological Society, and author of many textbooks on ophthalmology and is particularly well known for *Hygiene of the Eye*. He read a paper on "The Evolution of the Cataract Operation." Explaining the physiology of the cataract as a calcification of the crystalline lens, Dr. Posey traced the development of the treatment of cataract from the earliest operation of "couching," through the operation by extraction and the treatment by needling, to the modern operation of removal of the intracapsular lens, perfected in India fifty years ago by Col. H. Smith. While the early operation for cataract

was often disappointing, the patient with cataract has today 95 chances out of 100 for useful vision after the operation.

While the skill and dexterity of the surgeon is most important in obtaining satisfactory results in operating for cataract, the patient's general health and willingness to co-operate during the tedious period of convalescence, and careful nursing are large factors in the ultimate restoration of useful vision.

Following the presentation of Dr. Posey's paper, motion pictures demonstrating the technique of cataract operation were shown by Dr. Frank C. Parker of Norristown, Pa. Operations, from simple cataract operation and iridectomy with cataract extraction through enucleation of the eyeball were shown with great clearness and detail. These films, which were taken by Dr. Parker, demonstrate the value of motion pictures in teaching medicine, for no attendance at the operation itself could permit such close observation of the technique of cataract removal.

Auto Accidents and Vision.—The recent publication by the Metropolitan Life Insurance Company of an illustrated pamphlet, "Seeing is Believing," shows that deaths caused by all of the major diseases are definitely decreasing, while the toll of deaths and accidents from automobiles is sharply mounting. With this increasing hazard of the automobile has come a recognition of the need of adequate vision tests for licensed automobile drivers. In an effort to see the exact status of vision tests throughout the country Dr. Morie F. Weyman of Los Angeles has examined the drivers' tests of each state. Thirty-three states have no vision requirement, while in those states that have such a requirement it runs from a high degree of acuity (20/30 in both eyes) to the mere ability to see ahead. Only in Maryland and Massachusetts is there a field of vision test. Maryland goes further in adding that each rejected candidate must go to an eye specialist of his own choosing for study and correction.

European requirements demand visual acuity of at least 20/40 in one eye and 20/20 in the other, while if sight is lost in one eye, the other must be 20/25. Field of vision must be normal, and there must be no marked diplopia and no marked diminution of light sense.

A plan to enforce these reasonable European standards for vision has been proposed in which the person whose vision does not meet these requirements would lose his license to drive and also be subject to liability because of poor driving, if involved in an accident.

Mobile Eye Clinic in Poland.—For rural sections of Poland an eye service which offers speedy and economical operation is the mobile ophthalmic clinic, which seeks to eradicate trachoma through treatment of cases, teaching hygienic practices, inspection of children, and teaching of the local medical personnel; it also offers free and immediate treatment for sufferers of other eye diseases.

Leslie Dana Medal Goes to Edward M. Van Cleve.—In recognition of the "most outstanding achievement in the prevention of blindness and the conservation of vision," Mr. Edward M. Van Cleve, principal of the New York Institute for the Education of the Blind, and member of the Board of Directors of the National Society for the Prevention of Blindness, was awarded the Leslie Dana Gold Medal for 1931. The presentation took place November 20, 1931. Mr. Van Cleve played an active part in the formation, in 1915, of the National Society for the Prevention of Blindness, and became its first managing director. As a member of the executive committee, he has continued active participation in the affairs of the Society since his resignation from the staff in 1923. Mr. Van Cleve was one of those most responsible for the successful World Conference on Work for the Blind, held in New York in April of this year, and his activities on behalf of the blind and in the interests of prevention of blindness have brought him into active cooperation with many of the national and local organizations in this field.

Rural Eye Examinations for Pennsylvania.—Medical students who are trained to give vision tests are chauffeurs of Pennsylvania's travelling healthmobiles which reach many rural children too far from usual health centers to receive attention. Two physicians, two nurses and two dental hygienists complete the staff of this health center on wheels.

David Starr Jordan, 1851–1931.—Among the many services which David Starr Jordan extended to humanity was his interest in the work of the National Society for the Prevention of Blindness. He was one of its honorary vice-presidents from the time that it became a national organization. In appreciation of his fine contribution and in expressing its regret, the board of directors of the National Society for the Prevention of Blindness passed the following resolution:

"A great scientist, a great educator, a great friend; thus have those who knew him best epitomized the personality of David Starr Jordan.

"Yet he was more than these. Or perhaps he bent each of these attributes and accomplishments to the crowning motive of his long, useful life, that of a great peacemaker. He realized that international peace can come only through international understanding and he used the medium of his scientific training, his educational authority and his faculty for friendship to further the bringing in of a universal peace.

"During his presidency of the University of Indiana and the presidency and chancellorship of Leland Stanford University, David Starr Jordan had unlimited opportunities for influencing the lives of thousands of students. He realized, however, that influence must be based upon example and he therefore built up for himself a philosophy of life that exemplified his own creed.

"There were but two kinds of war that David Starr Jordan recognized; war on war, and war on those untoward influences that tend to sap the health and strength of humanity. It was because of his interest in this war on the evils of the world that the National Society for the Prevention of Blindness found in him a friend. At its very first meeting held February 17, 1915, the board of directors of the newly established organization elected him honorary member and honorary vice-president. The official relationship he held until the time of his death.

"As it daily becomes more evident that the arts of peace must supplant the devastations of war, the influence of David Starr Jordan will have ever greater significance, and the National Society for the Prevention of Blindness will continue to wage that war on untoward conditions affecting mankind so that the arts of peace of which David Starr Jordan was so staunch an advocator may have an opportunity of flourishing in the land."

Only One of Four Defects Corrected.—Although the summer round-up of the Parent-Teacher Association makes it a point to

find and urge correction of the first graders' defects, only one in four has any correction made. The child with a vision defect stands a slightly higher chance of having it corrected than those with other defects, for three out of ten have eyes corrected. These figures are an indictment of our national parental conscience.

New Prevention of Blindness Bulletin.—Through the prevention of blindness department of the Missouri State Commission for the Blind a mimeographed monthly bulletin is issued. This new publication, *Out of Darkness with Proper Eye Care*, devotes each issue to a specific topic in the field of conservation of vision, with an added bibliography on the subject. Copies may be obtained by writing the Missouri State Commission for the Blind, St. Louis, Missouri.

Institute on the Conservation of Vision.—A two-day institute on sight conservation was held for health teachers and school nurses of the Southeastern District, under the direction of the New York State Commission for the Blind, Prevention of Blindness Department, on October 28 and 29. Eye health, eye structure, the eye in disease, and practical steps in prevention of eye disease and blindness were topics of interest to all. The New York State Commission for the Blind is planning to circularize a mimeographed report of the entire proceedings.

Naturalistic Eye Doctors Menace to Sight.—From Berlin comes word that a "save your natural eyesight" movement is threatening the advance of rational methods of sight conservation. By urging one therapeutic method for correcting all eye ills, and advising the abolition of eyeglasses, this false doctrine lures patients from legitimate cures through its apparent ease, until their eye difficulties have progressed to a point beyond repair.

Prevention of Blindness Conference in Japan.—The movement for the conservation of sight in Japan was given a new impetus when, at the conference for prevention of loss of sight, held in Tokyo under the auspices of the Central Social Work Society, it was decided to set apart October 10 as an annual conservation of sight day.

Post-school Care for the Exceptional Child.—A comment made by Dr. Frank Hauxwell, in the *Medical Officer* (England), may apply equally well in the United States. He says that while the exceptional child, handicapped physically, receives expensive care during his school years, there is no follow-up after he leaves school to see that he finds employment compatible with his handicap. Dr. Hauxwell urges the formation of committees to help these children after school days as a means of insuring that the extra money spent on their education will not be wasted.

Myope Classes in Scotland.—At the annual meeting of the Scottish National Federation for the Welfare of the Blind, held in Dundee on June 11 and 12, Dr. W. G. Sym spoke on the education of the partially seeing child. He urged the importance of constant wearing of glasses, and stressed the need of educating these children apart from schools for the blind. Mr. William Stone, superintendent of the Royal Blind Asylum pointed out the encouraging fact that infantile blindness is on the wane, and added that authorities had reason to hope that in a generation, no baby would be born blind and no baby would be blinded at birth by ophthalmia neonatorum.

Investigation of Silver Nitrate Ampules and Capsules.—The Chemical Laboratory of the American Medical Association has recently reported upon the strength and quality of commercially prepared silver nitrate found in wax and glass ampules. Contrary to the reactions of other chemicals stored in wax ampules, the silver nitrate retains its strength over a reasonable time. Among the leading brands purchased, there was some difference in the strength of the solution, yet all were over the official and required amount. The quantity of solution varies more considerably, and the average drop from wax ampules was less than the specified prophylactic amount. Glass ampules which were tested at the same time, deliver a more generous drop than the wax ampules, but it was generally felt that the danger that exists of a bit of the glass tip getting into the baby's eye overcomes any other advantage that the glass ampule may have. The Laboratory reports that with the glass ampule, in spite of all reasonable care, in many cases, glass was expelled with the drop.

Eye Movement Camera Perfected in Iowa.—Although the idea of a camera to study eye movements is not new, students of eye movements will welcome the recently perfected camera constructed at the University of Iowa which has many advantages over the older types of eye movement cameras. This camera records simultaneously binocular horizontal and vertical movements, making a positive record large enough for facile reading at a low cost of production.

The camera has use in many fields of research; it is being used to study eye fixation at far and near points; it facilitates analysis of eye movement habits of good and poor readers; it makes possible analysis of attention values of advertising; it notes changes in reading habits during re-education, the visual co-ordination of stutterers and the disintegration of eye movements during stuttering spasms.

Non-shatterable Glass Saves Man's Remaining Eye.—After a citizen of Billings, Montana, lost one eye when a flying piece of windshield glass struck him in the eye, his eye physician advised him to wear only non-shatterable glasses. The wisdom of this advice was demonstrated when, some time later, the man was thrown from his horse, and although his brow and cheek were severely cut, the non-shatterable glass protected his remaining eye.

United States Health News Urges Early Correction of Vision Defects.—Urging parents to take children who show any vision or eye defect to the oculist as soon as the defect is suspected, a recent issue of *Health News*, the United States Public Health Service's release, says "The chief advantage of early correction of visual defects is that it usually requires less treatment, and in some cases, such early treatment may cure the condition and secure for the child normal vision which would have been impossible had correction been delayed."

Eyes and Handedness.—Although the relationship between handedness and speech has been accepted by psychologists and those concerned with the correction of speech defects, relationship has been recently noted between handedness and crossed-eyes. Naturally left-handed children are often forced to use the right

hand through the misguided efforts of parents and teachers, and the co-ordination efforts which are demanded by this virtual shifting not only of manual power, but of all the physical motor centers of the brain, may cause one eye to lose its muscular activity.

Ophthalmia Neonatorum in Scotland.—A circular, issued by the Department of Health of Scotland addressed to medical health officers brings to the fore the great need not only of preventive treatment for ophthalmia neonatorum, but for prompt notification to the authorities so that skilled treatment may immediately be undertaken. In spite of the general care of the eyes of newborn babies in the past nine years, there has been an average of six cases of blindness a year from this unnecessary cause. "The department suggests that all local arrangements with a suitable hospital be made, in order that any case occurring in their area shall receive immediately the skilled care necessary to good results." It continues, "The total number of cases for Scotland is not large, and the expense of making adequate arrangements for treatment will be . . . negligible compared with the cost of the continuing liability of maintenance and education of neglected cases."

Radio Talk on the Eyes of the Newborn.—Under the auspices of the Massachusetts Department of Public Health, the State Medical Society recently spoke over the radio on eye infections of the newborn. Pointing out the undisputed value of the Credé prophylaxis in reducing ophthalmia neonatorum, the talk stressed the importance of regarding any eye infection during the first two weeks of life as suspicious, and indicative of stringent treatment under the care of a physician. Although the state of Massachusetts has no law compelling the instillation of nitrate of silver into the eyes of the newborn, the state requires the reporting of all cases, and encourages the use of prophylactic by supplying all physicians with ampules of silver nitrate. While the number of cases of blindness from ophthalmia neonatorum has steadily declined under this care, parents are urged to demand that all babies, born at home or in a hospital, receive the protection of prophylactic drops.

Vitamin Content of the Eye.—The close relationship between health and nutrition is no longer a matter of theory but of fact. The relationship between vitamin A and xerophthalmia has been seen, particularly in those countries where the diet is confined to starches, as in India and in China. Now the work of Dr. Arthur M. Yudkin, Yale University, actively demonstrates the presence of the essential vitamin A in the retina of the eye itself, in amounts far greater than in butter-fat, a rich source of this vitamin. When the body is robbed of this vitamin in normal diet, the amount in the retina also decreases.

It has been said that in America, the diet of all classes is so rich in milk, vegetables, eggs and butter-fats, that there is no xerophthalmia problem present. It is significant of the present country-wide depression that a nurse writes from Kansas that "many of the children are suffering from eye troubles, and all of these with bad eyes are from ten to fifteen pounds underweight."

Missouri Uses Film for Prevention of Blindness.—Since February, when the Missouri Commission for the Blind acquired the film "Preventing Blindness and Saving Sight," prepared by the National Society for the Prevention of Blindness and the University of Cairo, Egypt, and published by the Eastman Teaching Films, Incorporated, it has been exhibited to more than 60 organizations, and seen by nearly 20,000 people, in Missouri.

Immediate Care for Ophthalmia Neonatorum.—The New York State Commission for the Blind has created a small revolving emergency fund to be used for the immediate treatment of cases of ophthalmia neonatorum when it is impossible to secure immediate funds from another source for treatment. Any physician may communicate with the New York Commission for the Blind for this temporary aid, by telephone or telegraph, at its headquarters at 80 Centre Street, New York City. The Commission does not undertake the hospital care, but will lend immediate funds until local welfare can be obtained.

National Society Notes

STAFF members of the National Society have been spreading the message of sight conservation in co-operation with many organizations in allied fields. Mr. Lewis H. Carris, managing director, was guest of honor at the annual meeting of the Pennsylvania Association for the Blind, at Harrisburg, where he spoke on "Society's Duty to Prevent Blindness." At the joint meeting of the section of ophthalmology of the New York Academy of Medicine and the American College of Surgeons, on October 14, he spoke on "What is Being Done to Protect the Eyes of Industrial Workers."

The National Society regrets to announce the resignation of Dr. B. Franklin Royer, medical director, to take place on December 31, 1931. In his six years of association with the National Society, Dr. Royer has added to and broadened the work of the Society, notably in the public health field.

A new hall at the New York State School for the Blind at Batavia was dedicated and named for Dr. Park Lewis, vice-president of the National Society, on September 12, 1931. Dr. Lewis has returned from Paris, where he attended the annual meeting of the International Association for Prevention of Blindness on November 14.

At the two-day Institute for the Conservation of Vision, extended to the health teachers and school nurses of the Southeastern District by the Prevention of Blindness Department of the New York State Commission for the Blind, Mr. Carris, Mrs. Winifred Hathaway, associate director, and Dr. Royer participated in the program.

Through the efforts of Miss Eleanor P. Brown, secretary of the National Society, the morning session of the annual conference was arranged on "Medical Social Service in Eye Hospitals and Clinics," and Miss Brown presented a paper on "The National Society's part in Training and Placement of Medical-Social Eye Workers."

Miss Mary Emma Smith, director of nursing activities, attended the Annual State Conference of the State Health Department in Little Rock, Arkansas, where she showed the National Society's

newest film, "Preventing Blindness and Saving Sight"; at Fort Smith she demonstrated materials and methods of preschool vision testing before a meeting of teachers and public health workers and to several groups of student nurses. At the invitation of the Kansas State Nurses Association, Miss Smith again demonstrated preschool vision testing technique before that group and at the meeting of the Kansas State League for Nursing Education.

With the beginning of the school year, many calls have come for advice and consultation in the problems of organizing and conducting sight-saving classes. Among the cities Mrs. Hathaway has visited recently are Schenectady, Rochester, and Glen Cove, N. Y. At Rochester, Mrs. Hathaway had the opportunity to address a group of parents and teachers on the general topic of sight conservation, and to show the Society's film, "Preventing Blindness and Saving Sight."

Current Articles of Interest

Lighting Fixtures That Are Artistic and Mechanically Perfect, *The Modern Hospital*, September, 1931, published monthly by the Modern Hospital Publishing Company, Chicago, Illinois. Architects, lighting engineers and decorators who worked on the University Hospitals of Cleveland agreed "to combine in every lighting problem a correct scientific solution with an artistic expression of beauty." The result throughout the eleven new buildings is at once efficient and attractive. In patients' rooms, indirect lighting is supplemented with a small night-light. For the individual bed lights, screens of amber or rose gelatin soften the close light. In the professional units, artificial light was found to be more constant and reliable than daylight; artificial daylight is planned to eliminate glare, shadows and variation in the spectrum colors. In the general quarters, it is important to remember that ease in cleaning lighting fixtures is of paramount importance. Foreseeing lighting needs is more efficient in results and far less expensive.

Concerning Simple Glaucoma, Harry S. Gradle, M.D., *American Journal of Ophthalmology*, September, 1931, published monthly by the Ophthalmic Publishing Company, St. Louis, Mo. Provocative tests for the determination of simple glaucoma are described, of particular importance in borderline cases.

Strabismus in Children, Donald J. Lyle, M.D., *The Archives of Pediatrics*, October, 1931, published monthly by E. B. Treat & Company, New York, N. Y. The writer classifies types of strabismus and recommends treatment for them through improved physical and mental hygiene; through refractive corrections; through occlusion; through fusion training; through operation. He finds no type of strabismus is outgrown without correction, but on the contrary that all imbalance tends to progress with age.

Ophthalmology in Aviation Medicine, William F. Holzer, M.D., *American Journal of Ophthalmology*, September, 1931, published monthly by the Ophthalmic Publishing Company, St. Louis, Mo. A statement of ophthalmic standards for the commercial air pilot stresses the high standards of visual acuity, muscle balance, accommodation, color and field vision required.

Sex Differences in the Physical Impairments of Adult Life, Rollo H. Britten, *The American Journal of Hygiene*, May, 1931, published by School of Hygiene and Public Health of the Johns Hopkins University, Baltimore, Maryland. The Division of Research of the Milbank Memorial Fund finds from health examination records of insured persons that the rates of physical impairment are, on the average, higher for women than for men, in spite of the fact that the reverse is true of mortality data; defective vision is more common among women than among men up to the age of 50; housewives show a larger percentage of uncorrected vision than do women of other occupations.

Common Conditions in Industrial Ophthalmology, George J. Dublin, M.D., *Journal of the Medical Society of New Jersey*, September, 1931, published monthly by the Medical Society of New Jersey, Orange, N. J. Discussing the common conditions met by the ophthalmologist in industrial medicine, the writer urges the handling of the injured eye conservatively to maintain vision, to preserve appearance and relieve pain. He urges teaching workmen that the best first aid to an injured eye consists of leaving the eye alone, irrigation with clean cold water, and immediate consultation with a physician.

Healthful Lighting, William Firth Wells, *The Commonhealth*, April–May–June, 1931, published quarterly by the Massachusetts Department of Public Health, Boston, Mass. Despite the many important discoveries in the relationship between light and health, none of the newer uses of light as therapeutic agents—X-rays or ultra violet rays,—is as important from the health standpoint as that mixed white light known as illumination, through which we are enabled to see. Economically, psychologically and in health returns, the modern use of light, both natural and artificial, must be considered not as a matter of eye comfort, but as part of community public health.

The Control of Myopia, Edward Jackson, M.D., *American Journal of Ophthalmology*, August, 1931, published monthly by the Ophthalmic Publishing Company, St. Louis, Mo. Reviewing the literature on myopia, the writer points out the fallacy of believing that myopia cannot be cured to some extent, or prevented. He recommends for its prevention: (1) avoidance of close or continued

eye use during the early childhood years; (2) testing the vision of the preschool child; (3) seeing that all eyes are protected by good posture and adequate lighting during all eye work; (4) providing sight-saving classes for those who are seriously handicapped; (5) seeing that children requiring glasses wear them constantly; (6) guaranteeing the child proper nourishment and adequate rest throughout childhood.

The Challenge of Syphilis, Andy Hall, M.D., *Illinois Medical Journal*, October, 1931, published monthly by the Medical Profession of Illinois, Chicago, Ill. Syphilis, the causal factor of much physical and mental delinquency, adds its share to the number of blind in this country. More than 15 per cent of the total number of blind are victims of acquired or congenital syphilis. When routine prenatal care includes a Wassermann test, and all syphilitic mothers are treated in time, no child should lose its life by being born too soon, no child should be born blind or with the blinding disease in its blood. The writer urges upon the general practitioner a more complete examination and deeper understanding of the destructive role played by syphilis.

Ocular Muscle Operations, Joseph L. McCool, M.D., *California and Western Medicine*, September, 1931, published monthly by the California Medical Association, San Francisco, Calif. The author urges a full understanding of conditions causing squint for the best correction. He advises correction of refractive errors, and when this fails to correct strabismus, operation of the muscles. No rule of thumb method may be outlined for this delicate type of operation, but each must have careful anatomical study.

Refraction and Health, Pierce Shope, M.D., *Journal of the Medical Society of New Jersey*, September, 1931, published monthly by the Medical Society of New Jersey, Orange, N. J. That general health is dependent in large measure upon eye health is a known fact; correction of defects must go beyond adequate refraction to a study of the interior of the orbit and to a study of the eye as part of the whole body.

Management of Ocular Injuries, Nelson S. Weinberger, M.D., *New York State Journal of Medicine*, September, 1931, published twice a month by the Medical Society of the State of New York, New York, N. Y. The economic and social loss which follows the

loss of an eye demands that eye examinations after an accident be most carefully made, and that no possible field of injury be overlooked. The writer urges that tetanus antitoxin be administered in eye injuries particularly when the soft part is injured. Protein also aids in combating the possible spread of infection.

Ophthalmia Neonatorum, N. K. Lazar, M.D., *Illinois Medical Journal*, September, 1931, published monthly by the Medical Profession of Illinois, Chicago, Illinois. Ophthalmia neonatorum is caused by several different organisms, and gonococcus accounts for less than 50 per cent. The reduction of its incidence since the Credé treatment points out the necessity for the mandatory use of prophylaxis at every birth; silver nitrate is the most successful of prophylactics, and the author adds that treatment of cases already established must be undertaken immediately, consistently and gently to obtain results.

Cataract, John M. Wheeler, M.D., *Hospital Social Service*, August, 1931, published monthly by the Hospital Social Service Association of New York City, Inc., New York, N. Y. Defining and describing cataract, the author makes clear to the medical social workers before whom this paper was read, the etiology and types of cataract, the possibilities of cure through operation, and the need of personal help to the person so afflicted. When one eye alone is involved, the author does not advise operation, and he warns against telling the aged patient about the cataract if there is any possibility of his sight outlasting his life. In the discussion which followed this paper, the medical social worker was warned of the need to accustom the operated case to the use of glasses and to the fact that his sight is poor without them. The relationship between adequate prenatal nutrition and congenital cataract was brought out. Early contact between the patient, ophthalmologist and the social worker has an important bearing upon the successful carrying on of the case.

Medical Social Treatment of Patients Suffering with Cataract, Jeanne Wertheimer, *Hospital Social Service*, August, 1931, published monthly by the Hospital Social Service Association of New York City, Inc., New York, N. Y. Two cases of patients with incipient cataract and causal complications are cited, in which treatment reached an impasse without the aid of the medical social

worker. When the social and personal background was explained to the ophthalmologist, and the medical reasons for following directed regimes were explained to the patient in terms of her own understanding, both cases were brought to a satisfactory conclusion.

Medical Social Treatment of Patients Suffering with Cataract, Grace Cooke, *Hospital Social Service*, September, 1931, published monthly by the Hospital Social Service Association of New York City, Inc., New York, N. Y. The importance of early contact among patient, ophthalmologist, and social worker in order to bring about complete following of the medical orders was stressed. The social worker is in position to interpret and help execute the ophthalmologist's orders to the patient, while through the social worker's understanding of the patient's problems, the doctor is better able to see the patient as a whole.

Physical Examination of Chinese School Children, Ting-an Li, M.D., *Quarterly Journal of Chinese Nurses*, March, 1931, published by the Nurses' Association of China. Chinese school child shows a high proportion of physical defects, and health examinations are now instituted in order to correct them. In comparison to the British or American school child, all his defects are more frequent with the possible exception of dental defect. 19.8 per cent have trachoma, 21.9 per cent have visual defects other than this. While ideally complete physical examinations should be held once a year, this is not yet practicable, and biennial examinations, with special periods for special cases have proven adequate. Parents are asked to be present at the examinations for the purpose of gaining their co-operation in correcting the defects and overcoming the causes.

The Causes of Invasion of Trachoma into Mexico, Francisco Valenzuela, M.D., *Anales de la Sociedad Mexicana de Oftalmologia y Oto-Rino-Laringologia*, March and April, 1931, Vol. VIII, Nos. 15 and 16, published bi-monthly by the Mexican Society of Ophthalmology and Oto-Rhino-Laryngology, Mexico City, Mexico. Along the west coast of Mexico trachoma was found in increasing amounts, and a relationship was seen between this marked outbreak and the persistent entry of oriental labor at these ports. Since the World War, an increase in the incidence of trachoma has been noted on the east coast, and the author concludes that all

mass movements of peoples, accompanied by privation, semi-famine and lack of sanitary facilities, bring after them a wake of trachoma.

Importance of Lighting in Occupational Therapy, Mary Stoy Vaughan, *Occupational Therapy and Rehabilitation*, June, 1931, published bi-monthly by the American Occupational Therapy Association, Baltimore, Md. In the rehabilitation work of patients, proper lighting conditions are of paramount importance. Glare may cause irritation, and undo all the good that the planned occupation was to accomplish. The psychological effect of light reflected from a colored wall or ceiling may be unintentionally depressing. The author gives a few general rules on lighting for close, medium close and distant work but advises consultation with an expert to plan lighting needs most efficiently.

Boy Made Dull by Poor Eyes, The Inquiring Reporter, *Everybody's Health*, September, 1931, published monthly by the Minnesota Public Health Association, St. Paul, Minn. A story of a dull boy turned into a normally interested student through correction of an unsuspected defect in his sight opens this popular article on sight conservation for school children. Eye protection begins with the infant's first breath, and must be continued through the school years through care of lighting, good nourishment, correction of defects and special class work for the seriously visually handicapped.

Medical Follow-up as It Brings Results, Margaret Van Fleet, *The Trained Nurse and Hospital Review*, October, 1931, published monthly by the Lakeside Publishing Company, New York, N. Y. A study of records of any large out-patient clinic shows three or less visits per patient. In the clinic of the Manhattan Eye, Ear and Throat Hospital it was found that less than 50 per cent of the patients whose eye diseases held a threat of blindness returned more than twice for continued treatment. Patients with refractive errors showed only a slightly better response, for only 53 per cent of these had secured glasses or continued clinic visits until their cases were closed. A well-organized social service follow-up, with carefully kept and organized records, increases the number who are dismissed as cured, and accomplishes the end result of clinic service—to cure and to prevent.

Contributors to This Issue

Mr. Edward M. Van Cleve has been intimately connected with the program for the prevention of blindness since its inception, and served for eight years as the managing director of the National Society; he is principal of the New York Institute for the Education of the Blind and a member of the executive committee of the National Society.

Dr. Willis S. Knighton is a practising ophthalmologist in New York City and on the staff of the New York Eye and Ear Infirmary.

As executive secretary of the Illinois Society for the Prevention of Blindness, **Miss Audrey M. Hayden** has aided the conservation of vision movement in that state as well as in Missouri, where she was previously engaged in carrying on blindness work.

Dr. Herman P. Davidson, who is a practising ophthalmologist in Chicago, is oculist on the medical staff of the Pullman Car and Manufacturing Corporation; his knowledge of prevention of blindness in industry is gleaned from practical experience.

Miss Gladys L. Dunlop is supervisor of sight-saving classes in Detroit, Michigan; her contribution to the growth of this special education has extended far outside the bounds of her own domain, for she has participated for the past few years in the summer courses for the training of sight-saving class teachers.

Dr. Louis Lehrfeld, a practising ophthalmologist in Philadelphia, Pa., is assistant surgeon at the Wills Eye Hospital; his is a familiar name in medical and lay circles for his articles on the eyes and prevention of blindness.

Dr. C. O. Sappington, who is a member of the editorial board of the SIGHT-SAVING REVIEW, is director of the Division of Industrial Health of the National Safety Council, and conducts a special page on Health in Industry in the *National Safety News.*

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